



Health in Iowa 2018 BRFSS Annual Report

From the Iowa 2018 Annual Behavioral Risk Factor Surveillance System Survey

Published May 2021



Iowa Department of Public Health
Protecting and Improving the Health of Iowans



Iowa Annual Behavioral Risk Factor Surveillance System Survey

Iowa Department of Public Health, *Health in Iowa BRFSS Annual Report from the Iowa 2018 Annual Behavioral Risk Factor Surveillance System Survey*. Des Moines: Iowa Dept. of Public Health, 2021. Web. <http://www.idph.iowa.gov/brfss>.

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Completed in cooperation with the Centers for Disease Control and Prevention (CDC), Population Health Surveillance Branch (PHSB) which provided financial and technical support for developing the questionnaire, implementing the survey, and processing and weighting data through grant award NU58DP006045-04-03.

We acknowledge the contributions of the following:

- The Center for Social and Behavioral Research staff and interviewers, University of Northern Iowa: Mary Losch, Director; Rod Muilenburg, Field Supervisor.
- Various IDPH programs and other organizations for supplemental funding to conduct and analyze the survey.
- The data contained in this report are made possible by the cooperation of Iowa residents. IDPH is very appreciative of the willingness of Iowans to participate in the survey.



Table of Contents

List of Tables and Figures	4
Executive Summary.....	5
Glossary	6
List of Acronyms	7
1. Introduction.....	8
2. Methodology.....	9-12
3. Demographics of the BRFSS Respondents	13
4. General Health Status and Quality of Life	14-15
5. Insurance Coverage and Access to Health Care	16-19
6. Exercise and Physical Activity	20-21
7. Overweight and Obesity	22-23
8. Diabetes	24-26
9. Respiratory Diseases	27-29
10. Cardiovascular Diseases	30-33
11. Tobacco	34-37
12. Alcohol Consumption.....	38-40
13. Breast and Cervical Cancer Screening	41-44
14. Colorectal Cancer Screening.....	45-46
15. Other Cancer Prevalence and Screening	47-48
16. Disability	49-51
17. Injury Control.....	52-55
18. Immunizations.....	56-58
19. HIV/AIDS.....	59-61
20. Oral Health	62-64
21. Mental Health and Adverse Childhood Experiences	65-67
Appendix: Iowa 2018 BRFSS Questionnaire	68-81



List of Tables and Figures

Tables

Table 3.1: Distribution of Iowa Survey Respondents by Age and Gender for Survey Year 2018	13
Table 3.2: Distribution of Iowa Survey Respondents by Race/Ethnicity for Survey Year 2018	13
Table 3.3: Distribution of Iowa Survey Respondents by Level of Education for Survey Year 2018	13
Table 3.4: Distribution of Iowa Survey Respondents by Annual Household Income for Survey Year 2018.....	13
Table 4.1: Percentage of Self-Reported General Health Status, 2018	14
Table 4.2: Percentage of Self-Reported days of Poor Physical and Mental Health in past 30 days, 2018	15
Table 5.1: Percentage of Uninsured Iowans Age 18-64, 2018.....	17
Table 5.2: Percentage of Responses to Health Care Access Related Questions in Iowa, 2018	18
Table 6.1: Physical Activity in Iowans, 2018	21
Table 7.1: Overweight and Obesity Based on BMI, 2018	23
Table 8.1: Iowans Ever Told They Had Diabetes, 2018	25
Table 9.1: Iowans Currently and Formerly Having Asthma, 2018	28
Table 9.2: Iowans Who Have Been Told they Have COPD, 2018.....	29
Table 10.1: Prevalence of Heart Attack and Stroke in Iowa Adults, 2018	31
Table 10.2: Combined Prevalence of Heart Attack and Coronary Heart Disease and Combined Prevalence of Heart Attack, Coronary Heart Disease and Stroke, 2018	32
Table 11.1: Current Smoking in Iowa - 2018.....	34
Table 11.2: Percentage of E-Cigarette Users in Iowa 2018	36
Table 12.1: Binge Drinking and Heavy Drinking Among Iowa Adults, 2018	39
Table 13.1: Use of Mammography by Iowa Women, 2018	42
Table 13.2: Proportion of Iowa Women Having Pap Test, 2018.....	43
Table 14.1: Prevalence of Colorectal Cancer Screening in Iowans Meeting Recommendations, 2018	46
Table 15.1: Prevalence of Iowans Reporting Ever Having Cancer, 2018.....	48
Table 16.1: Percent Reporting Being Disabled, 2018	50
Table 16.2: Percent Having Been Told by a Doctor They Had Some Form of Arthritis, 2018	50
Table 17.1: Prevalence of Falls in Iowa, 2018	53
Table 17.2: Prevalence of Risks for Motor Vehicle Related Injury in Iowa, 2018	54
Table 18.1: Percentage of Influenza and Pneumonia Immunizations in Adult Iowans, 2018	57
Table 19.1: Percentage of Iowans Tested for HIV/AIDS, 2018	60
Table 20.1: Percentage of Iowans Having Dental Care, 2018	63
Table 21.1: Prevalence of Depression in Iowa Adults, 2018.....	66
Table 21.2: Percent of Mental and Physical Health Measures by Number of Adverse Childhood Experiences (ACEs)	67

Figures

Figure 4.1: Iowans Reporting Fair or Poor Health Status, 2018.....	15
Figure 5.1: No Health Insurance Trend 2012 – 2018 Iowans Age 18-64.....	16
Figure 6.1: Percentage of Iowans Engaging in Leisure-time Physical Activity in the Past 30 Days by Year, 2011-2018.....	21
Figure 7.1: Overweight and Obesity by Year, 2013-2018.....	22
Figure 7.2: Obesity by Age and Sex, 2018	23
Figure 8.1: Percent of Iowans Diagnosed with Diabetes per Year, 2012-2018.....	25
Figure 9.1: Current Asthma in Iowa by Year—2011-2018	28
Figure 10.1: Prevalence Among Adult Iowans of Heart Attack, Cardiovascular Disease and Stroke, 2013-2018	33
Figure 11.1: Percentage of Current and Former Smokers by Age, 2018.....	35
Figure 11.2: Current Smoking and E-Cigarette Use in Iowa by Year and Age – 2012-2018	35
Figure 12.1: Binge and Heavy Drinking by Year, 2012-2018.....	40
Figure 12.2: Binge Drinking among Iowa adults by age and sex, 2018	40
Figure 16.1: Adults with Disability in Iowa Trend, 2016-2018 New Method	49
Figure 16.2: Percent of Iowans Diagnosed with Arthritis by Year 2011-2018	51
Figure 16.3: Percent of Iowans with Arthritis by Age, 2018	51
Figure 18.1: Flu & Pneumonia Immunizations by Year, 2011-2018, Age >= 65	57
Figure 19.1: Iowans having HIV test by year – 2011-2018.....	60
Figure 19.2: Percentage of Iowans Reporting Ever Being Tested for HIV by Age and Gender, 2018	61
Figure 21.1: Iowans Ever told they had Depression by Year, 2012-2018.....	66



Executive Summary

The Iowa Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing telephone survey conducted in partnership with the State of Iowa and the Centers for Disease Control and Prevention (CDC). In 2018, BRFSS collected 9,127 telephone interviews from residents, age 18 and older, living in private residences or college housing regarding health conditions, health-related behaviors, attitudes, and awareness of major contributors to illness, disability, and premature death. BRFSS also monitors the prevalence of these indicators over time statewide. Health-related issues analyzed include general health status, health care access, tobacco use, alcohol consumption, body weight, physical activity, nutrition, diabetes, respiratory conditions, immunizations, cancer screening and HIV/AIDS testing. Comparisons are made to other states and to Healthy People 2020 and Healthy Iowans goals.

FACT

BRFSS is the nation's premier state-based system of health-related telephone surveys.



Significant findings for 2018 include:

- The percentage of uninsured Iowans age 18 to 64 continued to increase, but Iowa remains one of the states with the lowest rates of uninsured non-elderly adults.
- Over 1 out of 3 Hispanic Iowans aged 18-64 are uninsured (36.6%).
- The percentage of Non-Hispanic Black Iowans who cannot afford to seek a doctor because of cost continues to rise and has almost doubled since 2016.
- Iowa was one of 9 states reporting obesity rates at or above 35%, at 35.3%.
- Rates of diabetes have increased steadily since 2015, and the highest diabetes rates over the last 6 years were reported in 2018.
- Iowa was one of two states with the second lowest current asthma rate in the U.S.
- A higher percentage of youth aged 18-24 currently used e-cigarettes/vaping products than regular cigarettes. Iowans aged 25-34 showed increases in both cigarette and e-cigarette use from 2017 to 2018, but 25-34 year olds continue to use cigarettes at much higher rates than they use e-cigarettes. 1 out of every 4 current cigarette smokers were between the ages of 25 and 34.
- 1 out of 4 adult Iowans (25.4%) were told that they had some form of arthritis.
- Twice as many males than females were binge drinkers.
- The highest rates of binge and heavy drinking over the past 6 years were reported in 2018, and Iowa had the 3rd highest prevalence rate for binge drinking and the 4th highest prevalence rate of heavy drinking in the US.
- Iowa had the highest rate of drinking and driving across the country.
- Iowa's rates of breast cancer screening for women 40 and up were the 3rd highest in the nation, but this rate still falls short of the Healthy People 2020 goal.
- For those 65 and older, both the influenza and pneumonia rates were lower than in 2017, and the flu immunization rate was the lowest it has been over the past 7 years.
- Iowans had the 3rd lowest rate of being tested for HIV/AIDS across the country.

Glossary

95% confidence interval: a range of values in which there is a 95% chance of the true value.

Anxiety: excessive worry about everyday events.

Arthritis: A group of over 100 different rheumatic diseases and conditions that result in pain and reduction of functionality in and around the joints.

Asthma: a chronic inflammatory disease of the lungs in which the airways become blocked or narrowed, causing breathing difficulty.

Binge Drinking: drinking too much at one time; five drinks for men or four drinks for women.

Cancer: a group of cells that grows out of control and has the ability to invade normal tissue.

Cervix: the lower part of the uterus (womb).

Coefficient of Variability: a standardized measure of dispersion defined as the ratio of the standard deviation to the mean.

Colonoscopy: a test that uses a hollow, lighted tube to inspect the interior walls of the rectum and the entire colon.

Depression: a state of low mood and an aversion to activity.

Diabetes Mellitus: a group of diseases characterized by high levels of blood glucose resulting from defects in insulin production, insulin action or both.

Disability: an umbrella term for impairments, activity limitations and participation restrictions.

Frequent Mental Distress: having 14 or more of the last 30 days in which mental health was not good.

Health-Related Quality of Life: an individual's or group's perceived physical and mental health over time.

Influenza or "flu": a contagious respiratory illness caused by viruses that infect the nose, throat and lungs.

Impairment: any loss or abnormality of psychological, physiological or anatomical structure or function.

Mammography: an x-ray examination of the breast to detect abnormalities.

Papanicolaou (Pap) test: The principal screening test for cervical cancer.

Partial Complete: an interview that was terminated before it was complete, but sufficient data had been collected to use for most measures.

Pneumonia: a lung disease caused by bacteria, viruses and other infectious agents such as fungi.

Population: the complete set of objects of interest; for instance, all adult Iowans would be a population.

Precancerous Polyps: abnormal growths in the colon and rectum that can develop into colorectal cancer.

Prevalence: the degree to which a characteristic or condition exists.

Sample: a set of observations used to represent a larger set of things.

Sampling Frame: a list of all those within a population who can be sampled.

Sigmoidoscopy: a test that uses a hollow, lighted tube to inspect a segment of the colon.

Standard Deviation: a measure of the variability of observations around their mean.

Stratum: a set of things into which a larger set can be divided based on some common characteristic.

FACT

BRFSS collects data on health-related risk behaviors, use of clinical preventive practices and health care access related to chronic health conditions and injury.

List of Acronyms

ACEs: Adverse Childhood Experiences
ADLs: Activities of Daily Living
AIDS: Acquired Immunodeficiency Syndrome
ATDs: Assistive Technology Devices
BMI: Body Mass Index
BRFSS: Behavioral Risk Factor Surveillance System
CATI: Computer-Aided Telephone Interviewing
CDC: Centers for Disease Control and Prevention
CHC: Coronary Heart Disease
CI: Confidence Interval
COPD: Chronic Obstructive Pulmonary Disease
CVD: Cardiovascular Disease
DSS: Disproportionate Stratified Sampling
FMD: Frequent Mental Distress
FOBT: Fecal Occult Blood Test
HIV: Human Immunodeficiency Virus
HPV: Human Papilloma Virus
HRQOL: Health-Related Quality Of Life
IDPH: Iowa Department of Public Health
MI: Myocardial Infarction
NRT: Nicotine Replacement Therapy
PSA: Prostate Specific Antigen
SHS: Secondhand Smoke
SIDS: Sudden Infant Death Syndrome
TLC: Therapeutic Lifestyle Changes

FACT

Adults 18 years or older are randomly selected to participate in the survey and participation is voluntary.



Introduction

History

In 1984, the Centers for Disease Control and Prevention (CDC) launched the Behavioral Risk Factor Surveillance System (BRFSS), working in an ongoing fashion with several states to assess the health status and health risk behaviors of their citizens. In 1988, Iowa began full participation in BRFSS. The BRFSS is now conducted in all 50 states, the District of Columbia and a few American territories.

Nature of the Survey

The Iowa BRFSS is an ongoing telephone survey. It is financially and technically supported by the CDC with further financial support from public and private sources.

The BRFSS is designed to collect information from residents age 18 and over living in private residences or college housing on health conditions, health-related behaviors, attitudes and awareness. It also monitors the prevalence of these indicators over time. The indicators surveyed are major contributors to illness, disability and premature death.

This report focuses on the data collected during calendar year 2018. Some of the health-related issues discussed are general health status, mental health, health care access, injury, cancer screening, tobacco use, alcohol consumption, body weight, physical activity, oral health, respiratory conditions, immunizations, HIV/AIDS awareness, diabetes, cardiovascular disease and heart disease.

Objectives

The objectives of the BRFSS are:

1. To determine the state specific prevalence of personal health behaviors related to the leading causes of premature death.
2. To develop the capacity of state health departments to conduct credible telephone surveys.
3. To advance the understanding that certain health-related behaviors are critical indicators of health.

Use of BRFSS Data

The CDC developed the BRFSS to help states assess health risks and monitor trends. Comparable surveillance methods are used in all states. This allows for comparisons among states and for the assessment of geographic patterns of risk factor prevalence.

The BRFSS information is used to design, implement and support public health activities. These activities are designed to reduce the premature death and disability of Iowa residents. State public health departments are responsible for planning, implementing and evaluating disease prevention programs.

Many of these programs involve health risk behavior modification. Examples of health risk behavior modification programs in Iowa are the Diabetes Prevention and Control program, nutrition and physical activity campaigns, tobacco cessation and counter-marketing campaigns, campaigns encouraging flu vaccination, and campaigns to increase health screenings and checkups.

One way to assess program effectiveness is to monitor the prevalence of risk factors in the population. Comparing different times, demographic groups or geographic areas may be quite useful in developing, implementing and evaluating intervention programs.

FACT

The BRFSS information is used to design, implement and support public health activities to reduce the premature death and disability of Iowa residents.

Methodology

Questionnaire Design

The BRFSS questionnaire is updated each calendar year by the CDC and by each participating state. The questionnaire consists of three sections: 1) the core questions required of all states participating in BRFSS; 2) a set of standardized modules developed by the CDC which states may opt to include in their survey; and 3) state-added questions which are designed and administered by individual states to address locally identified health problems. Changes in core and optional module questions were discussed and determinations were made whether to offer them at an annual national BRFSS meeting. They have been previously tested. A group of interested individuals from the Iowa Department of Public Health, guided by the state coordinator, met to discuss which optional modules and state-added questions to include in the coming year. The emerging survey plan was reviewed by the Iowa BRFSS Advisory Committee.

Participation by Iowans in the BRFSS survey is random, anonymous, voluntary and confidential. Survey participants are requested to provide such demographic information as age, sex, race, marital and employment status, annual household income, educational level, and location of residence by county and ZIP code. Information that could possibly be used to identify the respondent, such as location, is suppressed in public use data.

Sampling Process

Two sampling frames are used in the BRFSS. One is for landline telephones, while the other is for cell phones. Only adults age 18 years and older were interviewed in both samples. People residing in group homes or institutions were not sampled.

In the landline sample, one person residing in a household was interviewed. Households were selected using list-assisted random-digit dialing. This method provides a list of randomly chosen phone numbers from the pool of all existing landline phone numbers. These numbers are not drawn in a simple random fashion, but use what is known as the disproportionate stratified sampling technique (DSS). This sampling methodology was designed to produce a random sample of Iowa telephone numbers, including unlisted numbers and new subscribers, in an efficient fashion.

The DSS method divides landline phone numbers into two strata. The first stratum is residential but unlisted. The second stratum is composed of residential listed numbers. Each stratum was sampled at a different rate. The listed residential numbers were sampled at the highest rate. Some numbers were marked by the list provider as not to be called because they have been predetermined to be nonresidential or nonworking. There was no set number to be sampled per group and completed interviews were not thrown out.

The landline sample was also stratified into six geographic regions. These regions are the same regions used by health resource and

emergency planning groups within the state. Geographic regions were represented at the same proportion as their population within the state.

Iowa had a 65.8% landline and 90% cell phone interview completion rate among eligible respondents in 2018.

Increasingly, many people, including the young, single, ethnic minorities and renters, are opting not to use traditional landline telephone service in favor of cell phones (AAPOR Cell Phone Task Force 2010; Blumberg & Luke 2017). Therefore, another sampling frame was added devoted to households having cell phones. Iowans were interviewed on whichever phone type they were reached. The number of cell phone interviews was set large enough that more than 25% of the sample should be users of cell phones only. The cell phone sample was also geographically stratified into the six regions. The oversample strata were not done, since it is not possible to determine such specific geography for cell phones. Since the cell phone is more an individual appliance than a household appliance, the selection of one person per household was not done. College housing was included in the cell phone sample. These respondents were also asked some extra questions; for instance, they were asked if they were doing anything that would make it unsafe to conduct the interview, and if so, were not interviewed. Because of mobility of cell phone use, there were occasions when cell phone interviews were done involving people living in other states. The number of cell phone interviews in our sample is, therefore, larger than the number called by our data collection contractor. Cell phone interviews from other states only contained responses to the core questions, since there was no way for them to know which modules we were using or our state added questions.

Methodology *continued*

Approximately equal numbers of interviews per month were conducted from January through December in 2018 for a total sample size of 9,127. Of these, 2,306 were landline and 6,821 were cell phone. Interviews were conducted in both English and Spanish.

Interviewers made multiple attempts to reach a number to complete an interview before replacing that number. If the person selected to take the survey was not available, an appointment was made to complete the interview at another date and time. If the person was not available during the interview period, or if the person refused to participate, no other person was interviewed at that number. Attempts were made to convert initial refusals into participants.

The Interview Process

The interviews were conducted daytime, evenings and weekends with appointments as needed to schedule or complete interviews. The average time to complete an interview was 24.7 minutes for landline and 22.6 minutes for cell phone. The response rate, defined as completed interviews + partial completes divided by all eligible households called, was 55.7% for landline and 55.2% for cell phones. Although the response rates seem rather low, they have increased over the past year and are better than most states produce.

Not all interviews were fully completed. A partial complete is an interview that was terminated before it was complete, but sufficient data had been collected to use for most measures. This means that results from questions later in the questionnaire are determined from a somewhat smaller sample than earlier questions, even when not restricted to some sub-sample such as a particular age group. See Appendix for the questions and their order.

A Computer Aided Telephone Interviewing (CATI) system was used. The CATI system not only assists interviewers in presenting the questionnaire and recording the responses, it also helps keep track of appointments and callback attempts, and reports statistics of call dispositions.

Advantages and Limitations

Telephone interviews provide a means to conduct affordable surveys to monitor the prevalence of behavioral risk factors.

Surveys based on telephone interviews are much faster to complete than surveys based on in-person interviews. In one hour, an experienced telephone interviewer can handle busy numbers, calls not answered and refusals to participate, and still successfully complete one and one-half interviews. In contrast, in one day of in-person interviewing, many miles of travel may be required with few interviews completed.

Another advantage of telephone surveys is the much higher response rate compared to self-administered surveys, such as mail surveys.

Telephone interviews have a higher response rate than self-administered surveys.

Supervision and administration are simpler for telephone interviews than for in-person interviews. All calls can be made from one central location and supervisors can monitor interviewers for quality control.

One main limitation to telephone surveys is that all lowans are not reachable by telephone. Some do not live in households, but are in institutions such as nursing homes or prisons. Some households do not have telephones. Persons of low socioeconomic status are less likely than persons of higher socioeconomic status to have uninterrupted telephone service and are therefore under-sampled. Furthermore, the percentage of households with a telephone varies by region. Telephone technology such as caller I.D. and call blockers that block telemarketers also pose problems for telephone surveys.

Furthermore, some inaccuracy is expected from any survey based on self-reported information. For example, respondents are known to under-report their weight and inaccurately recall socially undesirable habits. People's memories may also fail or play tricks on them. The potential for bias must always be kept in mind when interpreting self-reported data.

Despite these limitations, prevalence estimates from the BRFSS correspond well with findings from surveys based on in-person interviews and actual physical measurements, including studies conducted by the National Center for Health Statistics and the American Heart Association.

Analysis of the data

Unless everyone in the state was asked questions about his or her health, there would be no way to know exactly what these answers would be. When analyzing BRFSS data, conclusions are to be drawn about the entire adult population of the state of Iowa based on only a sample of randomly chosen people. The true prevalence in the population can only be estimated.

The judgment of the value of prevalence in a population, such as the state based on the prevalence within a sample, always involves educated guesswork. The prevalence values from the survey and the true state population prevalence values may differ by some amount, but a range of state values that are probably true can be determined with a high degree of confidence from the prevalence in the sample.

Most tables in this report will indicate a range of values in which there is a 95 percent chance of the true Iowa value falling. This range is referred to as a 95% confidence interval (CI), and the value in the population is probably somewhere within the range. When the CIs of two or more groups do not overlap, their population values can be considered truly or significantly different.

An important factor in determining how well we can judge the response of all Iowans from the survey sample is the number of responses to the questions. The smaller the number of responses, the poorer is our ability to draw a conclusion about the whole state. Analyzing the data by such categories as age, sex, income, level of education and especially race/ethnicity means there are a smaller number of interviews in each particular group than in the whole survey. Furthermore, many questions are only answered depending on the answer to previous questions. For instance, a person would only be asked at what age they were diagnosed with diabetes if they answer “yes” to whether they have ever been told they had diabetes. These smaller numbers decrease the ability to determine statistically significant differences. Some data may not be reported as significant solely due to small sample sizes. In general, data in which the number of responses is less than 50 or the variability is too large (coefficient of variability greater than 30%) will not be reported since this data is considered highly unreliable.

Some people refuse to answer select questions, but choose to respond to the majority of the questions. Those interviews were still used in the final count for the total sample size. However, they were not counted on the specific questions they refused. Unless otherwise indicated, prevalence measures do not include those who refused to answer a question or said they did not know.

Weighting of the data

Generally, the best guess for how many Iowa adults would answer a question a certain way would be the same as how many adults in the sample answer that way. This is true, however, only if everyone in the state had an equal chance of being in the sample. This is not the case. The number of adults per household and the number of phone numbers per household influence a person’s likelihood of being included in the survey. Furthermore, certain demographic groups may be over or under-represented in the sample based on their ease of being reached and willingness to respond. For instance, about half the adult Iowa population is male, but typically only about 40% of the sample interviewed is male. To address these problems, the data in the sample is weighted to the state population. That means several of the above factors are used to give each interview a weight that represents a certain distinct number of people in the state population.

A landline telephone is seen as a household appliance, while a cell phone is more frequently seen as an individual possession. This means adults per household and phone numbers per household become irrelevant for cell phones. These two factors are not used in determining weights for cell phone interviews.

A large number of factors are considered in the weighting process. Age, gender, race/ethnicity, marital status, education level, home ownership, geographic region and cell vs. landline telephone are all considered. Preliminary weights from the ratio of sampled phone numbers to all numbers are adjusted recursively by these factors until a stable weight is produced.

The data collected in the BRFSS are obtained through a complex sample design. The direct application of standard statistical analysis methods for variance estimation and hypothesis testing may yield misleading results.

Methodology *continued*

This weighting method has been in place since 2011. Trend information in this report will only be determined from 2012 forward. Comparisons of pre-2011 data against post-2011 data may be unsound data due to the change in data collection methodology for the Core section of the questionnaire. For optional module and state added questions, 2012 was the first year cell phone interviews were included in the research design.

References

1. AAPOR Cell Phone Task Force. (2010). New Considerations for Survey Researchers When Planning and Conducting RDD Telephone Surveys in the U.S. with Respondents Reached via Cell Phone Numbers.
2. Blumberg S. J. & Luke, J. V. (2017). Wireless Substitution: Early Release of Estimates from the National Health Interview Survey: July–December 2016.

FACT

Since 2011, the BRFSS has used iterative proportional fitting (IPF), also known as raking, to weight data.



Demographics

Demographics of the BRFSS Respondents

In 2018, 9,127 respondents including 4,333 males and 4,771 females of 18 years or older completed the BRFSS survey interview. The following tables present the distribution of this respondent sample by

- 1) age and gender;
- 2) race/ethnicity;
- 3) level of education; and
- 4) annual household income.

Table 3.3: Distribution of Iowa Survey Respondents by Level of Education for Survey Year 2018

Level of Education	# of Total Respondents	% of Total Respondents
Less than High School	491	5.4
High School Grad. or GED	2,912	31.9
Some College/Tech. School	2,724	29.8
College Graduate	2,982	32.7
Unknown/Refused	18	0.20
Total	9,127	100.0

Table 3.1: Distribution of Iowa Survey Respondents by Age and Gender for Survey Year 2018

Age	Male		Female		Unknown ¹		Total	
	#	%	#	%	#	%	#	%
18-24	388	4.3	259	2.8	1	0.01	648	7.1
25-34	517	5.7	482	5.3	0	0.0	999	10.9
35-44	583	6.4	643	7.0	0	0.0	1226	13.4
45-54	667	7.3	688	7.5	2	0.02	1357	14.9
55-64	899	7.8	951	10.4	1	0.01	1851	20.3
65-74	794	8.7	933	10.2	5	0.1	1732	19.0
75+	439	4.8	743	8.1	5	0.1	1187	13.0
Unknown ²	46	0.5	72	.8	9	0.1	127	1.4
Total	4333	47.5	4771	52.3	23	0.3	9127	100



¹Unknown includes participants who refused to answer

²Unknown includes participants who responded with "Don't Know" or refused to answer

Table 3.2: Distribution of Iowa Survey Respondents by Race/Ethnicity for Survey Year 2018

Race/Ethnicity ³	# of Total Respondents	% of Total Respondents
White/Non-Hispanic	8,176	89.6
Black/Non-Hispanic	158	1.7
Other/Non-Hispanic ⁴	274	3.0
Hispanic	402	4.4
Unknown/Refused	117	1.3
Total	9,127	100.0

Table 3.4: Distribution of Iowa Survey Respondents by Annual Household Income for Survey Year 2018

Household Income	# of Total Respondents	% of Total Respondents ²
Less than \$15,000	528	5.8
\$15,000 - \$24,999	1,124	12.3
\$25,000 - \$34,999	737	8.1
\$35,000 - \$49,999	1,178	12.9
\$50,000 - \$74,999	1,461	16.0
\$75,000+	2,767	30.3
Unknown/Refused	1,332	14.6
Total	9,127	100.0

³ Since 2013, the race and ethnicity class was broken down into much finer categories for use in the BRFSS. Due to small numbers in various racial and ethnic groups in Iowa, we continue to display the same categories used in the past.

⁴ Multiracial is combined with Other/Non-Hispanic.

General Health Status and Health-Related Quality of Life

Background

General health status defined by responding to a single question such as “How is your health, in general?” has been found to be a significant predictor of mortality, though it may predict mortality less-well for racial/ethnic groups other than Non-Hispanic Whites (Woo & Zajacova, 2017). Researchers who gathered data from multiple studies using self-rated health to predict mortality found that the risk of mortality is 1.74 times greater for those who reported “poor” health compared to those who indicated “excellent” health, even after adjusting for the existence of other diseases (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006). Additionally, research shows that worse general self-rated health is associated with an increased risk of mortality, even adjusting for depression, cognitive function, ability to function on a day-to-day basis, and socioeconomic status (DeSalvo et al., 2006).

The Centers for Disease Control and Prevention (CDC) has defined health-related quality of life (HRQOL) as “an individual’s or group’s perceived physical and mental health over time” (Centers for Disease Control, 2018). Tracking health-related quality of life in different populations can identify subgroups with poor physical or mental health so that policies or interventions can be targeted to improve their health.

General Health Status Results

In 2018, when asked how their health was in general, 16.1% of lowans reported that it was excellent, which held steady to 2017’s rate of 16.0% but still showed a decline since 2016’s rate of 17.8%. Another 37.1% rated their health as very good. Additionally, 32.4% of lowans reported their health to be good while 14.3% rated their health as fair or poor, a decrease from 2017, when 15.4% of lowans rated their health as fair or poor (see Figure 4.1).

Age, education, household income, and race/ethnicity all had a significant impact on reported health status (see Table 4.1). While only 5.3% of those from households earning \$75,000 or more per year reported fair or poor health (the lowest prevalence among examined demographic groups), 37.3% of those from households earning less than \$15,000 per year did so, which was the highest rate reported among all demographic groups examined. Other respondents who reported having fair or poor health at a higher prevalence rate were those with less than a high school education (32.7%).

Table 4.1: Percentage of Self-Reported General Health Status, 2018

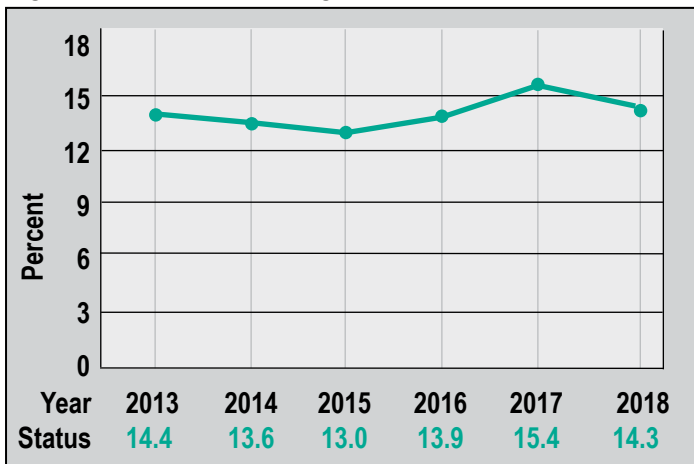
General Health Status				
Demographic Groups	Good or Better		Fair or Poor	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
TOTAL	85.7	(84.9-86.6)	14.3	(13.4-15.1)
Sex				
Male	86.2	(85.0-87.3)	13.8	(12.7-15.0)
Female	85.4	(84.2-86.5)	14.6	(13.5-15.8)
Race/Ethnicity				
White/Non-Hisp.	86.7	(85.0-87.5)	13.3	(12.5-14.1)
Black/Non-Hisp.	78.3	(71.4-85.2)	21.7	(14.8-39.6)
Other/Non-Hisp.	78.2	(72.3-84.1)	21.8	(15.9-27.7)
Hispanic	80.8	(76.5-85.1)	19.2	(14.9-23.5)
Age				
18 - 24	91.5	(88.7-93.6)	13.9	(6.5-21.4)
25 - 34	91.1	(89.2-93.1)	8.9	(6.9-10.8)
35 - 44	89.7	(87.8-91.6)	10.3	(8.4-12.2)
45 - 54	84.3	(82.1-86.5)	15.7	(13.5-17.9)
55 - 64	82.2	(80.3-84.2)	17.8	(15.8-19.7)
65 - 74	80.5	(78.3-82.6)	19.5	(17.4-21.7)
75+	78.0	(75.2-80.7)	22.0	(19.3-24.8)
Education				
Less than H.S.	67.3	(62.6-72.0)	32.7	(28.0-37.4)
H.S. or G.E.D.	83.6	(82.1-85.0)	16.4	(15.0-17.9)
Some Post-H.S.	86.6	(85.2-87.9)	13.4	(12.1-14.8)
College Graduate	93.4	(92.5-94.3)	6.6	(5.7-7.5)
Household Income				
Less than \$15,000	67.2	(57.9-67.6)	37.3	(32.4-42.1)
\$15,000 - 24,999	72.7	(69.7-75.7)	27.3	(24.3-30.3)
\$25,000 - 34,999	82.7	(79.6-85.7)	17.3	(14.3-20.4)
\$35,000 - 49,999	87.7	(85.6-89.9)	12.3	(10.1-14.4)
\$50,000 - 74,999	90.5	(88.9-92.2)	9.5	(7.8-11.1)
\$75,000+	94.7	(93.8-95.6)	5.3	(4.4-6.2)

FACT

14.3% of adult lowans rated their health as fair or poor in 2018.

General Health Status and Health-Related Quality of Life *continued*

Figure 4.1: Iowans Reporting Fair or Poor Health Status, 2018



Poor Self-Reported Health

Since January 1993, the BRFSS questionnaire has included four health-related quality-of-life (HRQOL) questions. Four measures of poor health – low general health, frequent physical distress, frequent mental distress and frequent activity limitation are derived from data collected through these questions.

In response to the general physical health question, “Now thinking about your physical health, how many days during the past 30 days was your physical health not good?”, persons who reported that their physical health was not good for greater than or equal to 14 of the preceding 30 days were defined as having frequent physical distress (FPD). Approximately 9.6% of Iowans reported experiencing FPD, which was slightly lower than the prevalence rate in 2017 (10.3%). Over 20% of Iowans with household incomes less than \$15,000 reported having 14 or more bad physical health days (22.5%), while only 4.3% of those with household incomes of \$75,000 or more reported experiencing FPD in the 30 days preceding the interview. As shown in Table 4.2, more females, Iowans 65 and over, those with lower education, and those with lower income reported having FPD.

In answer to the general mental health question: “Now thinking about your mental health, which includes stress, depression and problems with emotions, for how many days during the past 30 days was your mental health not good?”, persons who reported that their mental health was not good for greater than or equal to 14 of the preceding 30 days were defined as having frequent mental distress (FMD). In 2018, 10.2% of Iowans reported experiencing FMD, which was slightly lower than the rate in 2017 of 10.8%. Men, older people, college graduates, and those with a higher income had a lower prevalence of FMD.

Table 4.2: Percentage of Self-Reported Days of Poor Physical and Mental Health in Past 30 Days, 2018

Demographic Groups	14 - 30 Days of Poor Physical Health		14 - 30 Days of Poor Mental Health	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	9.6	(8.9-10.3)	10.2	(9.4-10.9)
Sex				
Male	9.1	(8.1-10)	8.4	(7.4-9.3)
Female	10.0	(9.1-11)	11.9	(10.7-13.1)
Race/Ethnicity				
White/Non-Hisp.	9.5	(8.7-10.2)	9.8	(9.0-10.5)
Black/Non-Hisp.	12.2	(6.9-17.5)	20.0	(12.8-27.2)
Other/Non-Hisp.	13.3	(8.8-17.8)	15.3	(10.5-20)
Hispanic	5.8	(3.5-8)	6.7	(4.0-9.3)
Age Group				
18 - 24	4.0	(2.5-5.6)	17.8	(14.6-21.1)
25 - 34	5.5	(3.9-7.1)	10.9	(8.9-13.0)
35 - 44	7.5	(5.8-9.2)	11.2	(9.3-13.1)
45 - 54	11.0	(9.2-12.9)	10.3	(8.5-12.1)
55 - 64	12.6	(10.9-14.3)	9.8	(8.3-11.3)
65 - 74	14.4	(12.5-16.3)	4.6	(3.5-5.8)
75+	14.0	(11.7-16.4)	4.6	(3.2-6.0)
Education				
Less than H.S.	15.4	(11.9-19)	12.9	(9.4-16.3)
H.S. or G.E.D.	11.2	(10-12.5)	10.4	(9.1-11.8)
Some Post-H.S.	10.1	(8.9-11.3)	12.1	(10.7-13.6)
College Grad.	4.9	(4.1-5.7)	6.3	(5.3-7.3)
Household Income				
Less than \$15,000	22.5	(18.5-26.6)	25.7	(21.1-30.3)
\$15,000 - 24,999	17.6	(15.1-20.2)	16.8	(14.1-19.5)
\$25,000 - 34,999	12.4	(9.6-15.2)	12.4	(9.6-15.3)
\$35,000 - 49,999	9.5	(7.7-11.3)	8.9	(6.8-11.0)
\$50,000 - 74,999	6.3	(4.9-7.6)	8.3	(6.6-10.1)
\$75,000+	4.3	(3.5-5.1)	5.1	(4.2-6.1)

References

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2. DeSalvo, K. B., Bloser, N., Reynolds, K., He, J., & Muntner, P. (2006). Mortality prediction with a single general self-rated health question: A meta-analysis. *Journal of General Internal Medicine*, 21(3), 267-275. <https://doi.org/10.1111/j.1525-1497.2005.00291.x>.
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Insurance Coverage and Access to Healthcare

Background

Access to comprehensive, quality health care services is important for promoting and maintaining health, preventing and managing disease, reducing unnecessary disability and premature death, and achieving health equity for all people (Office of Disease Prevention and Health Promotion, 2020). Access to health services means the timely use of personal health services to achieve the best health outcomes. Access to health care usually requires distinct steps:

- Entry into the health care system usually through insurance coverage
- Identifying a primary health care provider whom the patient trusts and can communicate effectively with on an ongoing basis
- The ability to access health care services as soon as they are needed in a viable geographic location

Access to health care impacts one's overall physical, social and mental health status as well as quality of life. Americans experience variable access to care based on race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity, and residential location. Barriers to health services such as the high cost, lack of availability of services or culturally knowledgeable care, or inadequate/no insurance coverage can lead to unmet health needs, financial burdens, the inability to receive preventative care, and delays in receiving the appropriate kind of care (Office of Disease Prevention and Health Promotion, 2020).

Insurance Coverage and Access to Healthcare Results

The percentage of people without health insurance coverage plummeted due to the Affordable Care Act having taken effect in 2010. Since 2016, though, an increasing number of lowans aged 18 to 99 have indicated that they were not covered by any type of health insurance. This held true in 2018, when 7.7% of all adult lowans reported they had no health insurance, which is an increase from the 7.2% of lowans between the ages of 18 and 99 who had no health insurance in 2017.

For adult lowans age 18 to 64 years old, the percentage of uninsured lowans decreased from 2012 to 2015 and then started to trend upward in 2017 (see Figure 5.1). The figure in 2018 indicates that the percentage of uninsured lowans

aged 18-64 continues to increase. In 2018, 9.4% of lowans between ages 18 and 64 years of age indicated that they were not covered by any type of health insurance, which is the highest percentage since 2014. All remaining findings for coverage are for this age group, since almost everyone 65 years and older is covered by Medicare.

**Figure 5.1: No Health Insurance Trend 2012 – 2018
lowans Age 18-64**

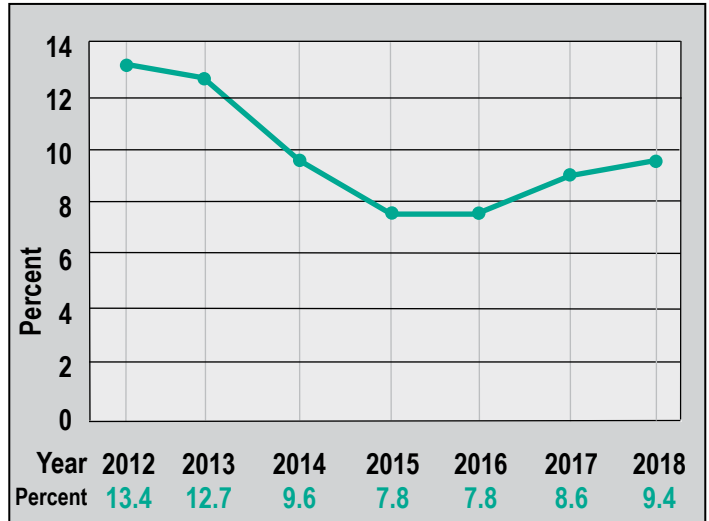


Table 5.1 shows that for people between ages 18 and 64 years old, those without health care coverage tended to be male, young, less educated and have household incomes of less than \$50,000 per year. Additionally, Hispanic lowans lacked health care coverage at the highest rate (36.6%) compared to those who were White/Non-Hispanic, Black/Non-Hispanic, and Other/ Non-Hispanic. Although this was almost a 10% increase in the percentage of uninsured Hispanic lowans between the ages of 18 and 64 from 2017 to 2018, the increase was not statistically significant. This being said, more Hispanic lowans are uninsured than any other racial or ethnic group in Iowa with more than 1 out of 3 Hispanic lowans between the ages of 18 and 64 not having health insurance. People with less than a high school education and those who were Hispanic had the highest percentages of individuals without health care coverage (28.5% and 36.6% respectively). College graduates had 3% with no coverage which was a lower rate than any other education level (see Table 5.1).

Insurance Coverage and Access to Healthcare *continued*

Table 5.1: Percentage of Uninsured Iowans Age 18-64, 2018

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	9.4	(8.5-10.3)
Sex		
Male	11.2	(9.9-12.5)
Female	7.6	(6.3-8.9)
Race/Ethnicity		
White/Non-Hispanic	7.0	(6.2-7.9)
Black/Non-Hispanic	15.5	(8.4-22.5)
Other/Non-Hispanic	13.1	(7.9-18.3)
Hispanic	36.6	(31.4-41.9)
Age Group		
18-24	13.6	(10.3-16.9)
25-34	11.5	(9.4-13.6)
35-44	9.4	(7.6-11.2)
45-54	7.1	(5.6-8.6)
55-64	6.1	(4.9-7.3)
Education		
Less than H.S.	28.5	(22.5-34.4)
H.S. or G.E.D.	12.4	(10.6-14.1)
Some Post-H.S.	7.4	(6.1-8.7)
College Graduate	3.0	(2.2-3.8)
Household Income		
Less than \$15,000	14.8	(10.7-18.9)
\$15,000 - 24,999	17.8	(14.4-21.2)
\$25,000 - 34,999	19.7	(14.4-25.0)
\$35,000 - 49,999	12.5	(9.7-15.4)
\$50,000 - 74,999	6.3	(4.5-8.0)
\$75,000+	2.8	(2.0-3.7)

Two other demographic variables that had an impact on health care coverage for those under the age of 65 were employment status and marital status. Unemployed Iowans reported 13.1% being not covered by health insurance (a decrease from 2017), while 9.2% of employed or self-employed individuals were not covered (an increase from 2017). Unemployed excludes people who are retired or unable to work. People who were married tended to have health care coverage at higher rates than those who were not, such that 12.7% percent of unmarried respondents were not covered, while only 6.7% of married respondents lacked coverage. Both of these figures have increased since 2017.

When asked if there was a time in the past 12 months when they needed to see a doctor but could not because of the cost, 7.7% of all adult Iowans said that there was (see Table 5.2). The percentage was higher for younger people, people with less education, people with lower incomes and racial and ethnic minorities. The lowest percentages were found in people with annual household incomes of \$75,000 or more, people age 65 and over and those who were college graduates. These had between 3.1% and 4.4% not covered. The highest percentages were found in Black/Non-Hispanic adult Iowans with 22.8% not seeking care due to the cost. The percentage of Hispanic Iowans who needed to see a doctor but could not because of cost was lower in 2018 than in recent years, but is still among the highest rates (15.3%). The percentage of Black/Non-Hispanic Iowans who cannot afford to seek a doctor continues to rise and has almost doubled since 2016. Iowans who have earned less than a high school diploma are at disproportionately higher rates of not seeking medical care due to the cost than those with higher levels of education. Similarly, those who have an annual household income of \$75,000 or more have the lowest rates of not seeking medical care due to the cost.



FACT

In 2018, over **1** out of **3** Hispanic Iowans aged 18-64 were uninsured.

Insurance Coverage and Access to Healthcare *continued*

Table 5.2: Percentage of Responses to Health Care Access Related Questions in Iowa, 2018

Demographic Groups	Time Couldn't Afford Care		Have One Person as Health Provider		Had Checkup in Past Year	
	%	C.I. (95%)	%	C.I. (95%)	%	C.I. (95%)
Total	7.7	(7.1-8.4)	75.7	(74.7-76.8)	77.2	(76.2-78.3)
Sex						
Male	7.5	(6.5-8.4)	69.5	(67.9-71.1)	71.3	(69.8-72.9)
Female	8.0	(7.1-9.0)	81.8	(80.3-83.2)	82.9	(81.6-84.2)
Race/Ethnicity						
White/Non-Hispanic	6.5	(5.9-7.2)	78.0	(76.9-79.1)	77.6	(76.5-78.7)
Black/Non-Hispanic	22.8	(14.8-30.7)	63.8	(55.1-72.5)	80.5	(73.0-88.0)
Other/Non-Hispanic	13.1	(8.6-17.6)	69.3	(62.7-75.9)	74.6	(68.5-80.7)
Hispanic	15.3	(11.5-19.2)	49.7	(44.4-55.0)	70.7	(65.9-75.6)
Age Group						
18-24	10.1	(7.4-12.9)	60.5	(56.2-64.7)	67.7	(63.7-71.7)
25-34	9.4	(7.4-11.5)	62.6	(59.3-65.8)	66.5	(63.3-69.7)
35-44	9.6	(7.9-11.4)	74.4	(71.8-77.1)	71.4	(68.7-74.1)
45-54	6.9	(5.4-8.3)	80.8	(78.5-83.1)	76.7	(74.2-79.1)
55-64	7.8	(6.5-9.1)	82.8	(81.0-84.7)	81.8	(79.9-83.7)
65+	4.1	(3.2-4.9)	86.5	(85.1-87.9)	91.3	(90.1-92.4)
Education						
Less Than H.S.	15.8	(12-19.7)	59.3	(54.1-64.5)	74.8	(70.2-79.3)
H.S. or G.E.D.	8.9	(7.7-10.1)	76.2	(74.4-78.0)	78.2	(76.5-80.0)
Some Post-H.S.	7.2	(6.1-8.3)	76.4	(74.5-78.3)	76.5	(74.6-78.3)
College Graduate	4.4	(3.5-5.3)	79.6	(78.0-81.3)	77.7	(76.0-79.4)
Household Income						
Less than \$15,000	16.1	(12.3-19.8)	70.1	(65.5-74.8)	78.4	(74.0-82.8)
\$15,000 - 24,999	15.0	(12.4-17.6)	70.0	(66.7-73.3)	78.1	(75.2-81.1)
\$25,000 - 34,999	10.8	(8.2-13.3)	72.6	(68.3-76.9)	76.2	(72.5-79.9)
\$35,000 - 49,999	9.0	(6.8-11.1)	77.3	(74.4-80.3)	79.4	(76.6-82.3)
\$50,000 - 74,999	6.3	(4.8-7.8)	78.0	(75.5-80.6)	76.6	(74.1-79.1)
\$75,000+	3.1	(2.3-3.8)	78.5	(76.7-80.2)	75.5	(73.7-77.3)



FACT

Over **3** out of **4** adult Iowans had one regular health care provider in 2018.

Insurance Coverage and Access to Healthcare *continued*

Since it is important that care be coordinated, respondents were asked if they had one person they thought of as their personal doctor or health care provider. A positive reply was given by 75.7% of adult Iowans, which was an increase from 2017 when 73.3% of adult Iowans had a positive response. Women, White Non-Hispanics, older people, people with more education and people with higher household incomes reported having one regular provider. Hispanics had the lowest rates of having one regular provider (49.7%) which was a significant decrease than the percentage in 2017 (58.7%). That is, approximately 9,937 fewer Hispanics had one person as their health care provider from 2017 to 2018. On the other hand, those age 65 years old and older had the highest rate (86.5%).

When asked how long it had been since their last regular checkup, 77.2% said within the past year, which was a significant increase from the 70.4% who indicated this in 2017. On the other end, 0.4% of adult Iowans indicated that they had never had a checkup, which was a decrease from the percentage in 2017. More females than males had a check-up within the past year. Iowans who were 65 years old or older had the highest rates of having a recent checkup (91.3%), while those aged 25-34 had the lowest rate of having a recent checkup (67.7%). More White/ Non-Hispanic Iowans reported having a check-up in the past year than in 2017. The percentage of Other/Non-Hispanic and Hispanic Iowans experienced increases in the percentage who received an annual check-up, but the change was not statistically significant.



Comparison with Other States

In the 50 states and District of Columbia, the percent of non-elderly people without health insurance ranged from 5.9% to 27.1%. Iowa remains one of the states with the lowest rates of uninsured adults age 18-64 at 9.4%. The median for states and the District of Columbia was 13.2% which is the highest rate since 2014.

Health Objectives for Iowa and the Nation

The Healthy People 2020 and Healthy Iowans goals for health insurance coverage are to see increases in the proportion of people who are covered by health insurance so that all people will be covered by some form of health insurance. In Iowa, only 90.6% of non-elderly adults reported coverage in 2018. For all adults the figure was 92.3%. These percentages continue a trend in the opposite direction than the proposed goals and ultimately fall short. There are separate goals for people age 18 to 64 year olds and people 65 and over in terms of having a specific source of ongoing care. The goal for 18 to 64 is 89.4%, while the goal for age 65 and over is 100%. The results for Iowans indicating they had one person as a health provider were 73.0% (18-64 year olds) and 86.5% (65 years and older), thus, the goals have not been met. The Healthy Iowans goal for all adults was 82.0%. The obtained prevalence has increased to 75.7% but still falls short.

Healthy Iowans also has a goal of decreasing the percentage of adults who are not able to see a doctor because of the cost to 7.0%. With 7.7% of adult Iowans indicating they could not afford to see a doctor due to the cost, the state is getting close, but has not yet reached the goal. Healthy Iowans also has a goal of increasing the percentage of adults who have had a routine check-up in the past year to 76.0%. Iowa has reached the goal with 77.2% of adults having one in the past year.

References

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Exercise and Physical Activity

Background

A lifestyle that includes regular physical activity can reduce the risk of cardiovascular illness, certain cancers, osteoporosis, diabetes, falls, and other debilitating conditions (Centers for Disease Control and Prevention, 2020). Additionally, regular physical activity can help to strengthen bones and muscles, improve mental health and quality of sleep, as well as increase general quality of life. Despite the multitude of benefits, a large proportion of people in the United States remain inactive.

Any physical activity is better than none and the more the better. According to the Physical Activity Guidelines for Americans, 2nd edition, adults should strive to engage in 150 minutes per week of moderate aerobic physical activity, 75 minutes per week of vigorous aerobic physical activity, or some combination (U.S. Department of Health and Human Services, 2018). In addition, they should also engage in physical activity aimed at strengthening their muscles at a recommended level of at least two times per week.

Although the percentage of people who do not engage in regular physical activity remains high, there are efforts in motion to try to increase the physical activity level of people across the United States, and in Iowa specifically (Centers for Disease Control and Prevention, 2020; Iowa Department of Health, 2020). Interventions to increase physical activity include:

1. Designing communities where biking and walking is the easy choice.
2. Connecting activity-friendly routes with everyday destinations.
3. Increasing the number of complete streets in communities. A complete street is a street that has been designed with all users in mind: vehicles, cyclists and pedestrians.
4. Providing and increasing access to indoor and outdoor spaces for physical activity – away from busy streets, considering age and mobility of individuals. EX: parks and trails, fitness and recreational facilities, schools or universities, malls, senior centers and places of work.
5. Encouraging shared-use agreements to allow public access after hours in order to expand a property's usage.
6. Enhancing physical activity at places of work through support from management, access to facilities, policies and social support programs.

7. Continuous promotion of physical activity through motivation, signage and other resources.
8. Continuous promotion of physical activity and the built environment by the Iowa Department of Public Health and other organizations.

Encouraging people to have a less sedentary lifestyle by engaging in regular physical activity continues to be a significant step toward a healthier state and nation.

Exercise and Physical Activity Results

In 2018, 77.1% of respondents reported that they had engaged in some sort of physical activity for exercise during the past month other than their regular job. This percentage is the highest since 2014 when 77.4% of Iowans reported engagement in some sort of physical exercise (see Figure 6.1). Although the prevalence of exercise varies from year to year, the overall trend appears level.

A larger proportion of younger respondents reported engaging in leisure physical activity than older respondents. The percentage of respondents who exercised also increased with education and household income. This percentage was higher for Non-Hispanic Whites than for Hispanics. Men and women had similar rates of leisure physical activity in 2018. The lowest percentage of all examined demographic variables was for those who held less than a high school degree (57.7%), while the highest was for those who were college graduates (89.4%).

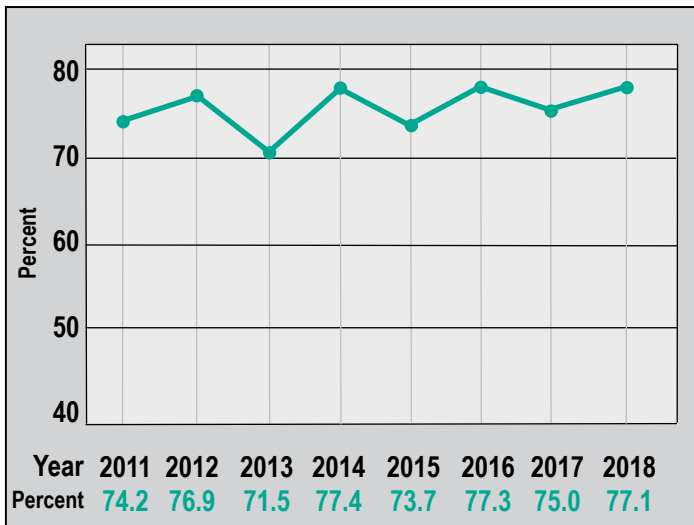
Since the neighborhood environment can have much influence on a person's level of physical activity, a module was asked about the neighborhood environment. It was found that 71.6% of Iowans rated their neighborhood as a very pleasant place to walk. Sidewalks were said to be present by 62.5% of adult Iowans. Only 27.3% of Iowans used schools for public recreational activity. However, about 3 in 5 Iowans (61%) reported using walking trails or parks in their community.

FACT

Encouragement of a less sedentary lifestyle is a step toward a healthier state and nation.

Exercise and Physical Activity *continued*

Figure 6.1: Percentage of Iowans Engaging in Leisure-time Physical Activity in the Past 30 Days by Year, 2011-2018



Comparison with Other States

Values for the measure of not engaging in leisure time physical activity in the 50 states and the District of Columbia ranged from a low of 16.4% to a high of 32.4%. Iowa ranked better than the median of 23.8% of adults not engaging in leisure time physical activity with a rate of 22.9%.

Health Objectives for Iowa and the Nation

The national target for reducing the proportion of adults who engage in no leisure-time physical activity is 32.6%. Iowa's level of 22.9% meets and exceeds this national target.

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Table 6.1: Physical Activity in Iowans, 2018

Demographic Groups	Any Leisure Physical Exercise in Last Month	C.I. (95%)
	%	
Total	77.1	(76.1-78.1)
Sex		
Male	77.7	(76.3-79.1)
Female	76.6	(75.1-78.0)
Race/Ethnicity		
White/Non-Hisp.	78.1	(77.1-79.1)
Black/Non-Hisp.	74.0	(66.6-81.4)
Other/Non-Hisp.	71.9	(65.5-78.2)
Hispanic	63.3	(58.2-68.5)
Age Group		
18 - 24	83.4	(80.1-86.8)
25 - 34	82.6	(80.1-85.1)
35 - 44	81.2	(78.9-83.6)
45 - 54	79.1	(76.8-81.5)
55 - 64	73.9	(71.7-76.1)
65 - 74	72.2	(69.9-74.6)
75+	60.7	(57.4-63.9)
Education		
Less than H.S.	57.7	(52.6-62.8)
H.S. or G.E.D.	71.5	(69.6-73.3)
Some Post-H.S.	77.8	(76.1-79.5)
College Grad.	89.4	(88.3-90.6)
Household Income		
Less than \$15,000	62.8	(58.0-67.5)
\$15,000 - 24,999	65.6	(62.4-68.8)
\$25,000 - 34,999	69.3	(65.0-73.6)
\$35,000 - 49,999	73.8	(71.0-76.7)
\$50,000 - 74,999	80.7	(78.5-82.9)
\$75,000+	87.8	(86.4-89.1)



Overweight and Obesity

Background

Overweight and obesity status reflect both individual and society-level aspects that consist of inherited, environmental, cultural and socioeconomic factors. Contributing individual factors include behavior and genetics, as well as dietary patterns, physical activity and inactivity, medication use and other exposures. Community level factors such as food and physical activity environment; education and skills; and food marketing and promotion play an important role in overweight and obesity prevalence rates (Centers for Disease Control and Prevention, 2019).

Obesity is a serious public health concern, and compared to those with a normal or healthy weight, those with obesity are at a higher risk for many diseases and health conditions, as well as premature death. The physical conditions include but are not limited to: high blood pressure, type 2 diabetes, coronary heart disease, stroke, sleep apnea and breathing problems, some cancers and gallbladder disease. Those who are obese are also at an increased risk of reporting a low quality of life and mental illnesses such as depression and anxiety (Centers for Disease Prevention and Control, 2019).

Strategies to combat obesity would seek to advance policies that:

- Increase the availability of affordable healthy foods in all communities;
- Increase the frequency, intensity and duration of physical activity;
- Improve access to safe and healthy places to live, work, learn and play;
- Limit screen time;
- Decrease stress; and
- Encourage employers to provide workplace wellness programs.

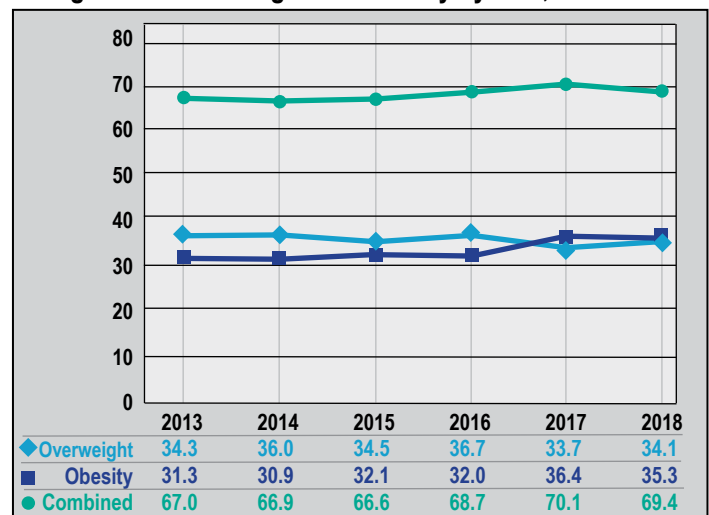
Overweight and obesity status are often estimated from weight standards that are adjusted for body height. Body mass index (BMI) is the most frequently used measure to determine the appropriateness of weight for a person's height. BMI is defined as a person's body weight in kilograms divided by their height in meters squared [weight (kg)/height (m²)] (Centers for Disease Control and Prevention, 2020). Estimations of the prevalence of overweight and obesity in this report are based on BMI determined from self-reported weight and height. In adults, overweight is considered to be a BMI value greater than or equal to 25 and less than 30, while obesity is considered

to be a BMI greater than or equal to 30. This self-reported method is likely to result in an underestimation of the actual extent of obesity. However, comparisons among demographic groups, states, and years are likely to be valid. Furthermore, this is the only measure of overweight and obesity available at the state level.

Overweight and Obesity Results

In 2018, 34.1% of non-pregnant adult lowans were overweight and 35.3% were obese, based on BMI. The combined percentage of individuals who were overweight or obese was 69.4%, which was lower than the combined prevalence in 2017 of 70.1%. Likewise, the rate of obesity in the state of Iowa decreased (about 1%) from the 2017 rate of 36.4% (see Figure 7.1). Unlike the obesity trend from 2017 to 2018, there was a higher prevalence rate of overweight individuals in 2018 compared to 2017.

Figure 7.1: Overweight and Obesity by Year, 2013-2018



An analysis by demographic factors shows an increase in both overweight and obesity rates for females over males based on self-reported weights from 2017 to 2018. Prevalence of overweight increases steadily with age, while a decline in obesity is seen after age 55 with the most pronounced decline seen after age 75. Following a similar trend from 2017, 2018 rates of obesity for females surpassed those of males between the ages of 18 and 34. From the age of 35, males had higher rates of obesity than females, with the biggest difference being in individuals aged 75 and older (see Figure 7.2).

The effects of education and income are different for overweight and obesity as well. For overweight, education seemed to have little systematic effect on overweight rates. If anything, those with some post-secondary education tended to have a higher prevalence of being overweight.

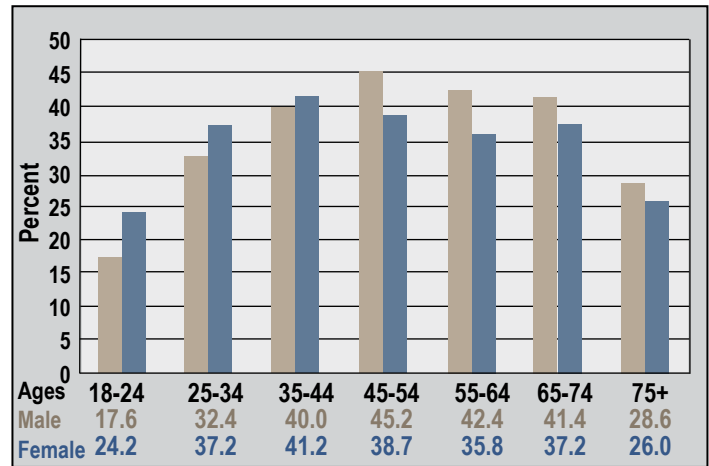
Overweight and Obesity *continued*

The percentage of overweight tended to be lowest for those who reported lower incomes while a different trend was true for obesity, in which the highest rates occurred for adults living in households with an annual income between \$15,000 - \$49,999 (see Table 7.1). Obesity prevalence was lowest for college graduates. Adults without a high school diploma and those with a high school diploma or equivalent had the highest self-reported obesity at 38.4% and 38.0% respectively, which were both lower than rates in 2017. Adults with some college (36.8%) and college graduates (29.2%) reported slightly lower rates.

Table 7.1: Overweight and Obesity Based on BMI, 2018

Demographic Groups	Overweight		Obese	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	34.1	(33.0-35.3)	35.3	(34.2-36.5)
Sex				
Male	38.6	(37.0-40.3)	36.0	(34.4-37.6)
Female	29.4	(27.8-31.0)	34.6	(32.9-36.3)
Race/Ethnicity				
White/Non-Hisp.	34.5	(33.3-35.7)	35.0	(33.9-36.2)
Black/Non-Hisp.	29.9	(21.5-38.4)	45.7	(36.3-55.0)
Other/Non-Hisp.	29.0	(22.7-35.3)	33.2	(26.3-40.2)
Hispanic	32.7	(27.6-37.9)	37.4	(31.8-43.1)
Age Group				
18 - 24	27.2	(23.3-31.1)	20.9	(17.3-24.5)
25 - 34	32.8	(29.6-36.1)	34.6	(31.2-38.0)
35 - 44	33.0	(30.1-35.9)	40.6	(37.5-43.6)
45 - 54	34.8	(32.0-37.6)	42.1	(39.1-45.0)
55 - 64	35.7	(33.2-38.2)	39.3	(36.7-41.8)
65 - 74	35.9	(33.3-38.5)	39.5	(36.8-42.1)
75+	42.0	(38.7-45.3)	26.9	(23.9-29.9)
Education				
Less than H.S.	29.1	(24.4-33.8)	38.4	(33.3-43.6)
H.S. or G.E.D.	32.9	(30.9-34.9)	38.0	(35.9-40.0)
Some Post-H.S.	36.1	(33.9-38.2)	36.8	(34.7-38.9)
College Grad.	34.8	(32.8-36.7)	29.2	(27.4-31.1)
Household Income				
Less than \$15,000	26.8	(22.3-31.3)	35.7	(30.7-40.6)
\$15,000 - 24,999	29.2	(26.1-32.4)	41.0	(37.6-44.5)
\$25,000 - 34,999	36.1	(32.0-40.2)	38.1	(33.9-42.3)
\$35,000 - 49,999	32.5	(29.4-35.6)	40.7	(37.4-44.0)
\$50,000 - 74,999	35.1	(32.2-37.9)	36.1	(33.2-38.9)
\$75,000+	37.1	(35.1-39.2)	32.5	(30.6-34.5)

Figure 7.2: Obesity by Age and Sex, 2018



Comparison to other states

In 2018, Iowa's obesity prevalence rate of 35.3% was about 1% lower than the rate in 2017 (36.4%), though was still well above the 2018 U.S. median rate of 30.9%. Iowa was one of 9 states reporting obesity rates at or above 35%. For obesity and overweight combined, the Iowa rate of 69.4% was also higher than the U.S. median of 65.9% in 2018.

Health Objectives for Iowa and the nation

The Healthy People 2020 objectives for the nation to be achieved on weight call for increasing the prevalence of healthy weight (neither overweight nor obese) to 33.9% among adults age 20 years and older. Iowa is slightly below this target, having 29.1% of its adult population at healthy weight, which is a decrease in the number of adults at a healthy weight from 2017 (33.4%). The Healthy People 2020 goal for obesity is 30.6%. With an adult obesity prevalence of 35.3%, Iowa fails to achieve that goal.

In 2012, all states had obesity prevalence rates lower than 35%. In 2018, 9 states across the country, including Iowa, reported obesity rates at or above 35%.

References

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Diabetes

Background

Diabetes mellitus is a long-lasting health condition that affects how the body turns food into energy (Centers for Disease Control and Prevention, 2019). People who have type 1 diabetes are not able to produce insulin. Type 2 diabetes is most common (90% - 95% of all diagnosed cases) and is a condition that results when your body does not use insulin properly resulting in insulin resistance (American Diabetes Association, 2019; Centers for Disease Control and Prevention, 2019).

Diabetes is the 7th leading cause of death in the United States. In the last 2 decades, as the population has aged and become more overweight or obese, the number of U.S. adults diagnosed with diabetes has more than doubled (Centers for Disease Control and Prevention, 2019). Currently, 30 million U.S. adults have diabetes and over 84 million have pre-diabetes. The majority of those who have prediabetes likely are unaware of their condition, and in many cases, pre-diabetes develops into full diabetes. The good news is that research studies have found that positive lifestyle changes can prevent or delay the onset of type 2 diabetes among high-risk adults. Lifestyle interventions including diet modification, weight loss and regular physical activity, such as walking for 150 minutes (2 ½ hours) each week, are recommended to delay diabetes onset in high-risk populations.

The complications of diabetes are many and severe and can include heart disease, stroke, high blood pressure, kidney disease, blindness, diseases of the nervous system, diseases of the mouth, complications during pregnancy, lower-limb amputations and lower resistance to other diseases. However, complications can be minimized when diabetes is diagnosed early and patients are taught to self-manage their disease through blood glucose control,



weight control, taking medications appropriately, decreasing unhealthy behaviors such as smoking, and implementing healthy lifestyle interventions (Centers for Disease Control and Prevention, 2020).

The state of Iowa is part of a national effort for health promotion and chronic disease prevention and management. In terms of diabetes prevention and control, the Iowa Department of Public Health collaborates with private and public agencies throughout Iowa to train health care providers on diabetes prevention and control through promotion and education. Through the Health Promotion and Chronic Disease Control Partnership, i.e. the Partnership, the IDPH provides educational materials for communities, health care providers, as well as certified outpatient diabetes education programs. Among other efforts, the IDPH is involved in certifying community-based outpatient diabetes education programs, maintaining involvement with diabetes care providers and educators across the state, and monitoring, evaluating and reporting diabetes-related data (Iowa Department of Public Health, 2020).

Diabetes Results

In 2018, 10.0% of Iowans had ever been told by a physician that they have diabetes, excluding women told only during pregnancy. This extends the increasing trend of Iowans having diabetes, and is the highest percentage over the last 6 years (see Figure 8.1).

Diabetes may affect persons of all ages, although prevalence increases with age. Table 8.1 below shows that the rate of diabetes is much higher for Iowans who are older, less educated, and have a lower household income. In 2018, the demographic group with the highest percentage of diagnosed diabetics was those over 75 years of age, at 21.7%, which was a decrease from 22.6% in this age category for the previous year. Adult Iowans between the ages of 18 and 24 had the lowest diabetes prevalence in 2018 (1.7%), similar to the rate of 1.6% in 2017.

FACT

In 2018, approximately
241,566 adult Iowans
had diabetes.

Diabetes *continued*

Table 8.1: Iowans Ever Told They Had Diabetes, 2018

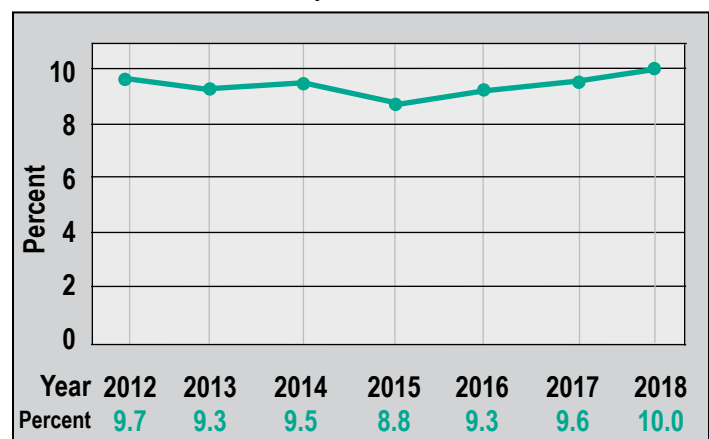
Demographic Groups	Prevalence Rate	C.I. (95%)
Total	10.0	(9.3-10.6)
Sex		
Male	10.1	(9.2-11.0)
Female	9.8	(8.9-10.7)
Race/Ethnicity		
White/Non-Hispanic	9.9	(9.2-10.6)
Black/Non-Hispanic	14.9	(9.0-20.7)
Other/Non-Hispanic	9.2	(5.8-12.7)
Hispanic	9.4	(6.3-12.4)
Age Group		
18 - 24	2.7	(1.3-4.1)
25 - 34	1.7	(0.8-2.6)
35 - 44	4.7	(3.4-6.0)
45 - 54	9.7	(8.0-11.5)
55 - 64	13.9	(12.2-15.6)
65 - 74	21.3	(19.1-23.5)
75+	21.7	(18.9-24.4)
Education		
Less than H.S.	13.3	(10.1-16.4)
H.S. or G.E.D.	12.0	(10.8-13.2)
Some Post-H.S.	10.3	(9.1-11.5)
College Graduate	6.0	(5.1-6.8)
Household Income		
Less than \$15,000	14.4	(11.1-17.7)
\$15,000 - 24,999	15.1	(12.8-17.4)
\$25,000 - 34,999	12.8	(10.0-15.6)
\$35,000 - 49,999	10.7	(8.8-12.6)
\$50,000 - 74,999	8.6	(7.1-10.1)
\$75,000+	6.2	(5.3-7.1)
Age diabetes diagnosed		
1 - 15 years old	5.0	(3.0-7.0)
16 - 30 years old	10.8	(8.4-13.2)
31 - 45 years old	21.2	(18.4-24.0)
46 - 60 years old	40.0	(36.6-43.3)
61+ years old	23.0	(20.2-25.8)

Among adult Iowans who had been told they had diabetes, 40% reported being first diagnosed between ages 46 and 60 years old. Five percent of those ever diagnosed with diabetes reported their first time being diagnosed under the age of 16.

When asked if they had a test for diabetes in the past 3 years, 55.5% of Iowans affirmed that they had, which was a significant increase from 2017 when 53.4% of Iowans indicated a test within the past 3 years. More females than males had received a test for diabetes in the past 3 years (57.5% vs. 53.4% respectively). The highest response was from Iowans between 65 to 74 years of age at 71.9% receiving a test in the past 3 years. In general, those who had higher household incomes tended to have received a test for diabetes in the previous 3 years.

More attention is being given to pre or borderline diabetes. If left untreated, between 15% and 30% of those with prediabetes will develop type 2 diabetes within 3 to 5 years (New York State Department of Health, 2017). The progression from prediabetes to full blown type 2 diabetes can take many years, but up to 70% of individuals may experience this progression in their lifetime (Nathan et al., 2007). In 2018, 9.0%, or an estimated 97,018 Iowa adults, were told by their doctor that they have prediabetes, which is an increase of almost 22,400 from 2017. The highest percentage of these were among Hispanic populations, at 12.1%. When analyzed by age group and education level, Iowans aged 65 and older reported the highest levels of prediabetes as well as those with less than a high school education.

Figure 8.1: Percent of Iowans Diagnosed with Diabetes per Year, 2012-2018



Comparison to other states

The median prevalence rate of diagnosed diabetes for the 50 states and the District of Columbia was 10.9% in 2018, with Iowa's prevalence of 10% being about 1% better than the median. Prevalence across the U.S. ranged from 7% to 16.2%.

References

1. Centers for Disease Control and Prevention. (2019). About Diabetes. Available at <https://www.cdc.gov/diabetes/basics/diabetes.html>.
2. American Diabetes Association (2019). Overview. Available at <https://www.diabetes.org/diabetes>.
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5. Iowa Department of Public Health. (2020). Diabetes Prevention and Management. Available at <https://idph.iowa.gov/diabetes>.
6. New York State Department of Health. (2017). Prediabetes. Available at <https://www.health.ny.gov/diseases/conditions/diabetes/prediabetes/>.
7. Nathan, D. M., Davidson, M. B., DeFronzo, R. A., Heine, R. J., Henry, R. R., Pratley, R., Zinman, B., & American Diabetes Association. (2007). *Impaired Fasting Glucose and Impaired Glucose Tolerance*. *Diabetes Care*, 30, 753-759.

FACT

You may be able to prevent or delay diabetes by losing 5% to 7% of your starting weight, getting at least 30 minutes of physical activity 5 times a week and eating smaller portions to reduce the amount of calories consumed.



FACT

Race and ethnicity are a factor in developing diabetes. African Americans, Hispanic/Latino Americans, American Indians, Pacific Islanders and some Asian Americans are at higher risk of developing diabetes.

Resources

- Iowa Department of Public Health - Diabetes Management: <http://www.idph.iowa.gov/Diabetes/Diabetes-Management>.
- Iowa Diabetes Statewide Stratic Plan.pdf: http://www.idph.iowa.gov/Portals/1/userfiles/187/Diabetes%20Statewide%20Strategy%20Final_05_2017.pdf.
- American Association of Diabetes Educators: <https://www.diabeteseducator.org/>.
- American Diabetes Association: <http://www.diabetes.org/>.
- Centers for Diabetes Control and Prevention: <https://www.cdc.gov/diabetes/home/index.html>.
- JDRF (The former Juvenile Diabetes Research Foundation International): <https://www.jdrf.org/>.
- National Diabetes Education Program: <https://www.cdc.gov/diabetes/ndep/index.html>.

Respiratory Diseases

Background

Few things are as immediately important to life as the ability to breathe. There are some respiratory diseases that can make breathing difficult, such as asthma and chronic obstructive pulmonary disease (COPD).

Asthma is a chronic, inflammatory disease of the lungs in which the airways become blocked or narrowed causing breathing difficulty. It is characterized by recurrent wheezing, breathlessness, coughing, and chest tightness (National Heart Lung and Blood Institute, 2020).

This chronic disease affects more than 24.7 million Americans of all ages. Asthma is the most common chronic disease of childhood. About 5.5 million children under the age of 18 (7.5%) suffer from asthma (Centers for Disease Control and Prevention, 2020). Prevalence among adults and children has increased sharply since 1980 (Centers for Disease Control and Prevention, 2011).

The causes of asthma are not completely understood, but are most likely a combination of personal and environmental risk factors. Those risk factors for asthma include family history of asthma and allergies, acute respiratory infections, exposure to indoor air pollution (tobacco smoke, animal dander, dust mites, cockroaches, occupational exposures to more than 250 substances), outdoor air pollution (burning leaves, pollen, air pollutants), obesity and lack of exercise. After developing asthma, a person often becomes especially sensitive to any exposures to the environmental risk factors listed (National Heart Lung and Blood Institute, 2020).

Asthma is a leading cause of inpatient admission and of unscheduled emergency department and physician office visits. Many of these admissions and visits could be avoided if medical and self-management of asthma were carried out according to national guidelines. Self-management of asthma involves the proper use of asthma medications and devices as well as the avoidance of known triggers. People who suffer from asthma are encouraged to develop an asthma management plan.

Poor asthma control continues to be associated with increased emergency department visits, hospitalizations, and medical costs. The estimated total cost of asthma to society, including medical expenses (\$50.3 billion), loss

of productivity resulting from missed school or work days (\$3 billion per year), and asthma related death (\$29 billion) was an estimated \$81.9 billion in 2013 (Nurmagambetov, Kuwahara, & Garbe, 2018). Medical expenses associated with asthma were \$3,266 per person per year (in 2015 U.S. dollars) during 2008-2013 (Nurmagambetov et al., 2018).

Chronic Obstructive Pulmonary Disease (COPD) includes both chronic bronchitis and emphysema. It is one of the most common lung diseases. Chronic bronchitis is defined by a long-term cough with mucus, while emphysema is defined by destruction of the lungs over time. Most people with COPD have a combination of both conditions (MedlinePlus, 2021).

Smoking is the leading cause of COPD. The more a person smokes, the more likely that person will develop COPD. Another cause is exposure to secondhand smoke or air pollution.

There is no cure for COPD. However, there are many things you can do to relieve symptoms and keep the disease from getting worse. Persons with COPD must stop smoking. This is the best way to slow the lung damage. Medications may also be used to treat COPD symptoms. Oxygen therapy at home may be needed if a person has a low level of oxygen in their blood.

Respiratory Diseases Results

In 2018, 12.1% of lowans reported ever being diagnosed by a physician with asthma. Out of all adult lowans, 7.9% currently had asthma, and 3.8% formerly had asthma*. This is a lower percentage than in 2017 when 13.0% of lowans reported ever having and 9.3% reported currently having asthma and most similar to the percentage in 2016 when 12.1% of lowans reported ever having and 7.8% percent reported currently having asthma (see Figure 9.1).

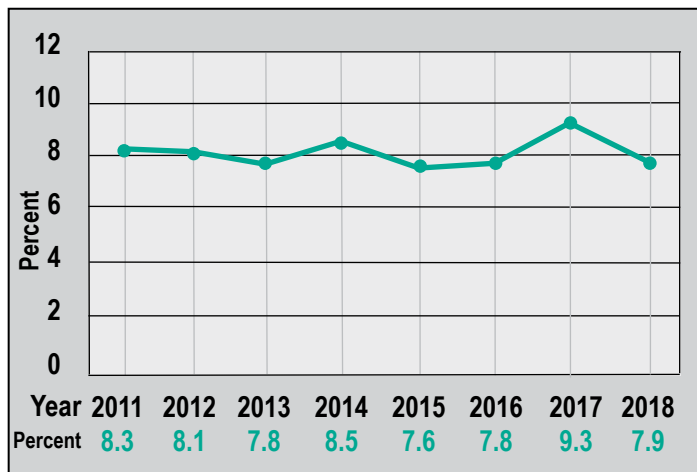
* For some who had ever had asthma, their current status could not be determined.

FACT

7.9% of lowans currently have asthma, and **5.8%** have ever had COPD.

Respiratory Diseases *continued continued*

Figure 9.1: Current Asthma in Iowa by Year – 2011-2018



In Iowa, more women, people with less than a high school education, and people with a lower annual household income currently have asthma. Fewer Hispanics reported having asthma than Non-Hispanic Whites, Non-Hispanic Blacks and Other Non-Hispanics. The highest current asthma prevalence was among people earning less than \$15,000 per year (17.8%), and the lowest prevalence was among Hispanics (4.0%; see Table 9.1).

Starting in 2006 the BRFSS has collected a considerable amount of information from the people who reported they or their children had ever had asthma in a special callback survey. The data from that survey is not included in this report, but may be presented separately.

When asked if they had been told they had COPD, 5.8% said they had. This is slightly lower than in 2017 when 6.4% reported that they had ever been told they had COPD. Women had a higher prevalence than men, but there was not a statistically significant difference between men and women (see Table 9.2). COPD was more common among older people, people with less education, and people with a lower household income. Adult Iowans aged 25-34 had the lowest reported prevalence rate of ever having COPD (0.8%), while those with a household income of less than \$15,000 per year had the highest prevalence rate (18.9%).

Table 9.1: Iowans Currently and Formerly Having Asthma, 2018

Demographic Groups	Current Asthma		Former Asthma	
	%	C.I. (95%)	%	C.I. (95%)
Total	7.9	(7.2-8.6)	3.8	(3.3-4.3)
Sex				
Male	5.8	(5.1-6.6)	4.2	(3.5-4.9)
Female	9.8	(8.8-10.9)	3.5	(2.8-4.1)
Race/Ethnicity				
White/non-Hispanic	7.6	(6.9-8.3)	3.7	(3.2-4.2)
Black Non-Hispanic	20.6	(13.0-28.2)	2.4	(0.0-5.3)
Other Non-Hispanic	10.8	(6.8-14.9)	7.2	(3.7-10.8)
Hispanic	4.0	(2.0-6.0)	3.3	(1.3-5.3)
Age Group				
18-24	9.8	(7.2-12.3)	7.0	(4.8-9.2)
25-34	7.5	(5.7-9.2)	5.9	(4.3-7.5)
35-44	7.2	(5.7-8.7)	3.4	(2.4-4.7)
45-54	9.4	(7.6-11.2)	2.9	(1.9-3.8)
55-64	7.6	(6.2-8.9)	2.7	(1.9-3.4)
65-74	7.5	(6.1-8.8)	2.5	(1.7-3.3)
75+	6.3	(4.7-7.9)	1.8	(0.9-2.7)
Education				
Less than H.S.	13.5	(9.7-17.2)	3.2	(1.6-4.9)
H.S. or G.E.D.	7.3	(6.2-8.4)	4.1	(3.2-5.0)
Some Post-H.S.	7.4	(6.3-8.4)	3.9	(3.0-4.8)
College Graduate	7.5	(6.5-8.6)	3.6	(2.8-4.3)
Household Income				
Less than \$15,000	19.9	(15.7-24.1)	3.0	(1.3-4.7)
\$15,000- 24,999	11.8	(9.4-14.1)	4.0	(2.6-5.4)
\$25,000- 34,999	7.4	(5.4-9.5)	3.5	(1.9-5.1)
\$35,000- 49,999	6.6	(4.9-8.3)	3.7	(2.4-5.1)
\$50,000- 74,999	6.8	(5.4-8.2)	4.4	(3.1-5.6)
\$75,000+	5.2	(4.3-6.0)	3.4	(2.6-4.2)



Respiratory Diseases *continued*

Table 9.2: Iowans Who Have Been Told They Have COPD, 2018

Demographic Groups	COPD	
	%	C.I. (95%)
Total	5.8	(5.3-6.3)
Sex		
Male	5.3	(4.6-6.0)
Female	6.4	(5.6-7.1)
Race/Ethnicity		
White/Non-Hispanic	5.9	(5.4-6.5)
Black/Non-Hispanic	6.1	(1.6-10.5)
Other/Non-Hispanic	7.6	(4.1-11.2)
Hispanic	1.7	(0.5-2.8)
Age Group		
18-24	1.5	(0.5-2.5)
25-34	0.8	(0.3-1.4)
35-44	2.9	(1.8-3.9)
45-54	5.1	(3.8-6.5)
55-64	9.8	(8.2-11.4)
65-74	11.9	(10.2-13.6)
75+	11.8	(9.6-13.9)
Education		
Less than H.S.	12.1	(9.1-15.0)
H.S. or G.E.D.	7.4	(6.5-8.4)
Some Post-H.S.	5.2	(4.3-6.1)
College Graduate	2.7	(2.1-3.3)
Household Income		
Less than \$15,000	18.9	(15.1-22.7)
\$15,000- 24,999	11.2	(9.2-13.1)
\$25,000- 34,999	7.3	(5.3-9.3)
\$35,000- 49,999	4.6	(3.5-5.8)
\$50,000- 74,999	4.3	(3.1-5.5)
\$75,000+	1.9	(1.4-2.5)

FACT

In 2018, Iowa was one of two states with the second lowest current asthma rate in the U.S.

Comparison with Other States

In 2018, the prevalence rate of adult Iowans currently suffering from asthma was 7.9% which was lower than the median rate for the 50 states and the District of Columbia. The range was from 7.4% to 12.3%. Iowa had the same rate as South Dakota, and Texas was the only state that had a lower rate, with 7.4% of Texans reporting current asthma.



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Cardiovascular Diseases

Background

Cardiovascular disease (CVD) refers to any or all of the many disorders that can affect the circulatory system and is the leading cause of death in the United States. CVD most often means heart disease, heart failure or stroke. Heart disease includes coronary heart disease (CHD) or heart attack, also known as myocardial infarction (MI). CHD is related to a condition known as atherosclerosis, which occurs when plaque builds up on the walls of the arteries narrowing the channel for blood to flow through. This can cause a heart attack or stroke if a blood clot in the arteries blocks blood flow (American Heart Association, 2017).

A heart attack happens when a blood clot blocks blood flow to the heart. Stroke refers to a sudden impairment of brain function that occurs when 1) there is a blood clot in one of the blood vessels leading to the brain (ischemic stroke) which results in brain cells starting to die and a loss of functioning controlled by the brain or 2) when a blood vessel in the brain bursts (hemorrhagic stroke). Hemorrhagic strokes are usually caused by high blood pressure (hypertension; American Heart Association, 2017).

Almost half of Americans aged 20 years and older had some form of cardiovascular disease in 2016 (~ 121.5 million). Heart disease, stroke and hypertension were among the top 15 conditions causing disability in U.S. adults. For example, 3.0% of males and 2.0% of females became disabled as a result of a stroke (Benjamin et al., 2019). Suffering a stroke may lead to paralysis, speech difficulties, memory loss, emotional problems and changes in a person's behavioral style (American Stroke Association, 2020). Following a heart attack, individuals frequently suffer fatigue and depression and they may find it more difficult to engage in physical activities. In 2009, 25.0% of the most expensive inpatient hospital conditions were cardiovascular, including coronary atherosclerosis (heart disease caused by clogged/blocked arteries), acute myocardial infarction (heart attack) and congestive heart failure (Agency for Healthcare Research and Quality, 2012).

The economic impact of cardiovascular disease on our nation's health care system continues to grow as the population ages. About 1 in 6 health care dollars is devoted to cardiovascular disease. In 2011, heart disease and stroke cost the nation an estimated \$316.6 billion in health care

costs and lost productivity (Centers for Disease Control and Prevention, 2020). These costs are rising, such that the total cost of cardiovascular disease is projected to reach \$1.1 trillion by 2035 (Benjamin et al., 2019). On a personal level, families who experience heart disease or stroke not only have to deal with medical bills, but also lost wages and the real potential of a decreased standard of living.

Reducing cardiovascular disease risk requires an integrated strategy that includes:

- Choosing healthy habits including weight management by increased physical activity and a low fat, low-cholesterol diet with moderate sodium, sugar and alcohol intake; no smoking, and managing stress levels.
- Taking charge of medical conditions individually and by working with a health care team to check and control cholesterol levels, control blood pressure, manage diabetes, and take medicines for these conditions as directed by the healthcare professional.
- Community environmental support such as population screening to identify individuals with high levels of blood cholesterol, blood pressure, blood glucose and other individuals at risk for heart disease. Community support also includes interventions that teach the skills necessary for behavior change that make living a healthier life easier. One popular example is the establishment and upkeep of bicycle or walking trails for use by the public. For every \$1 investing in building these trails, it is estimated that there is a \$3 medical cost savings (Benjamin et al., 2019). Community physical activity interventions and strategies at work places, schools and the built environment also help to encourage a healthy lifestyle.
- Development of public policies that encourage healthy lifestyle behaviors. These may be implemented in the form of laws, regulations, standards or guidelines that contribute to setting these and other social and environmental conditions. For example, dietary patterns result from the influences of food production policies, marketing practices, product availability, cost, convenience, knowledge and choices that affect health and preferences that are often based on early-life habits.

Cardiovascular Diseases *continued*

Cardiovascular Disease Results

In 2018, 4.5% of adult lowans had been told by a doctor that they had a myocardial infarction (heart attack), which was higher than the rate of 4% reported in 2017. Although this percentage may seem small, this represents about 108,783 adult lowans. In 2018, 4.4% had been told they had coronary heart disease or angina which was an increase from 4.1% that was reported in 2017. About 2.5% had been told they

had a stroke (see Table 10.1). The reported prevalence of having a stroke was lower in 2018 than it was in 2017 when an estimated 3.1% of adult lowans reported being told by a doctor that they had ever had a stroke. There was no difference in stroke prevalence by sex.

FACT

Each year, 15-30% of stroke survivors are permanently disabled.

Table 10.1: Prevalence of Heart Attack and Stroke in Iowa Adults, 2018

Demographic Groups	Ever told you had a heart attack, also called Myocardial Infarction (MI)?		Ever told you had coronary heart disease or angina		Ever told you had a stroke	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	4.5	(4.1-4.9)	4.4	(3.9-4.8)	2.5	(2.2-2.8)
Sex						
Male	6.0	(5.3-6.7)	5.6	(4.9-6.3)	2.5	(2.1-3.0)
Female	3.1	(2.5-3.6)	3.1	(2.6-3.6)	2.4	(2.0-2.9)
Race/Ethnicity						
White/Non-Hispanic	4.6	(4.1-5.1)	4.5	(4.1-5.0)	2.5	(2.1-2.8)
Black/Non-Hispanic	2.9	(0.8-5.1)	3.7	(0.8-6.5)	3.4	(0.6-6.1)
Other/Non-Hispanic	5.6	(2.8-8.4)	4.5	(2.0-7.0)	4.2	(1.8-6.6)
Hispanic	1.8	(0.6-3.0)	0.7	(0.1-1.4)	1.2	(0.3-2.2)
Age Group						
18-24	0.3	(0.0-0.8)	0.1	(0.0-0.3)	0.2	(0.0-0.5)
25-34	0.6	(0.1-1.0)	0.2	(0.0-0.6)	0.3	(0.0-0.6)
35-44	1.0	(0.3-1.7)	0.6	(0.0-1.2)	0.6	(0.2-1.1)
45-54	4.1	(2.9-5.2)	3.5	(2.3-4.6)	1.8	(1.1-2.5)
55-64	5.5	(4.4-6.6)	5.0	(3.9-6.1)	3.3	(2.4-4.1)
65-74	9.7	(8.1-11.2)	10.7	(9.1-12.3)	5.7	(4.4-7.0)
75+	14.3	(12.0-16.5)	14.8	(12.5-17.2)	7.9	(6.3-9.6)
Education						
Less Than H.S.	7.8	(5.3-10.3)	6.6	(4.3-9.0)	2.9	(1.5-4.3)
H.S. or G.E.D.	5.9	(5.1-6.8)	5.9	(5.6-7.0)	3.2	(2.6-3.8)
Some Post-H.S.	3.9	(3.2-4.6)	3.9	(3.2-4.6)	2.4	(1.9-3.0)
College Graduate	2.4	(1.9-2.9)	2.4	(1.9-2.9)	1.6	(1.2-2.0)
Household Income						
Less than \$15,000	8.2	(5.9-10.5)	8.1	(5.6-10.6)	5.2	(3.4-6.9)
\$15,000- 24,999	8.2	(6.4-9.9)	6.4	(4.9-8.0)	5.1	(3.8-6.4)
\$25,000- 34,999	7.1	(5.1-9.1)	5.8	(4.1-7.6)	1.9	(0.8-2.9)
\$35,000- 49,999	5.2	(3.9-6.5)	4.4	(3.3-5.6)	2.6	(1.7-3.4)
\$50,000- 74,999	3.0	(2.2-3.9)	3.7	(2.8-4.7)	1.7	(1.0-2.3)
\$75,000+	2.3	(1.8-2.9)	2.4	(1.8-2.9)	1.1	(0.7-1.4)

Cardiovascular Diseases *continued*

Table 10.2 shows the distribution of cardiovascular disease by demographic groups. An estimated 6.5% of Iowans reported having ever being told by a doctor that they had either a heart attack/myocardial infarction or coronary heart disease/angina in 2018. Though this percentage is only slightly higher than 2017's rate of 6.3%, approximately 157,489 adult Iowans reported having experienced a heart attack or coronary heart disease, which is an increase of about 6,674 adult Iowans from 2017 to 2018. Eight percent reported being told they had any of the three conditions (heart attack, coronary heart disease or stroke), which was a slight decrease from the rate in 2017, when 8.2% of adult Iowans reported having any cardiovascular disease. Still, approximately 195,111 adult Iowans reported experiencing cardiovascular disease in 2018. Prevalence of cardiovascular disease increased with age and was highest for Iowans with annual household incomes less than \$25,000.

FACT

195,111 Iowans have had at least one of the three forms of cardiovascular disease in their lifetime.



Table 10.2: Combined Prevalence of Heart Attack and Coronary Heart Disease and Combined Prevalence of Heart Attack, Coronary Heart Disease and Stroke, 2018

Demographic Groups	Had any Heart Disease (MI or CHD)?		Had any Cardiovascular Disease?	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	6.5	(6.0-7.0)	8.0	(7.4-8.6)
Sex				
Male	8.4	(7.6-9.3)	9.8	(8.9-10.7)
Female	4.7	(4.0-5.3)	6.3	(5.6-7.0)
Race/Ethnicity				
White/Non-Hispanic	6.7	(6.2-7.3)	8.3	(7.6-8.9)
Black/Non-Hispanic	5.4	(2.1-8.7)	7.2	(3.3-11.1)
Other/Non-Hispanic	7.0	(4.0-10.1)	9.4	(5.8-12.9)
Hispanic	2.2	(1.0-3.5)	2.9	(1.5-4.4)
Age Group				
18-24	4.0	(0.0-0.9)	6.0	(0.0-1.2)
25-34	0.7	(0.2-1.3)	1.0	(0.3-1.7)
35-44	1.1	(0.4-1.8)	1.5	(0.7-2.4)
45-54	5.8	(4.4-7.2)	7.0	(5.5-8.6)
55-64	7.5	(6.2-8.8)	9.2	(7.8-10.6)
65-74	15.2	(13.2-17.1)	18.8	(16.7-20.9)
75+	21.3	(18.6-24.0)	25.5	(22.7-28.3)
Education				
Less Than H.S.	11.1	(8.2-14.1)	12.6	(9.5-15.6)
H.S. or G.E.D.	8.5	(7.5-9.5)	10.3	(9.2-11.4)
Some Post-H.S.	5.8	(4.9-6.6)	7.2	(6.3-8.1)
College Graduate	3.7	(3.0-4.3)	4.8	(4.1-5.5)
Household Income				
Less than \$15,000	11.9	(9.0-14.8)	14.5	(11.4-17.6)
\$15,000- 24,999	10.3	(8.4-12.3)	13.1	(11-15.2)
\$25,000- 34,999	10.4	(7.9-12.8)	11.5	(9-14.1)
\$35,000- 49,999	6.5	(5.1-7.9)	7.9	(6.4-9.5)
\$50,000- 74,999	5.1	(4.0-6.2)	6.3	(5.1-7.5)
\$75,000+	3.7	(3.0-4.4)	4.4	(3.7-5.2)

Cardiovascular Diseases *continued*

More men than women reported having experienced heart attacks or coronary heart disease in 2018. Hispanic Iowans experienced any heart disease and cardiovascular disease at lower rates than other racial/ethnic groups. Age is the variable with the most impact on having had these conditions, with 21.3% and 25.5% of those 75 years and older reporting having had a heart disease or having experienced any of the three cardiovascular conditions respectively. There was a decline in the rates of heart disease, stroke and cardiovascular disease from 2013 to 2015. Prevalence rates over the past 5 years peaked in 2016 and have steadily declined for any cardiovascular disease and stroke, though in recent years, there was a slight increase in the number of reported cases of heart disease (see Figure 10.1).

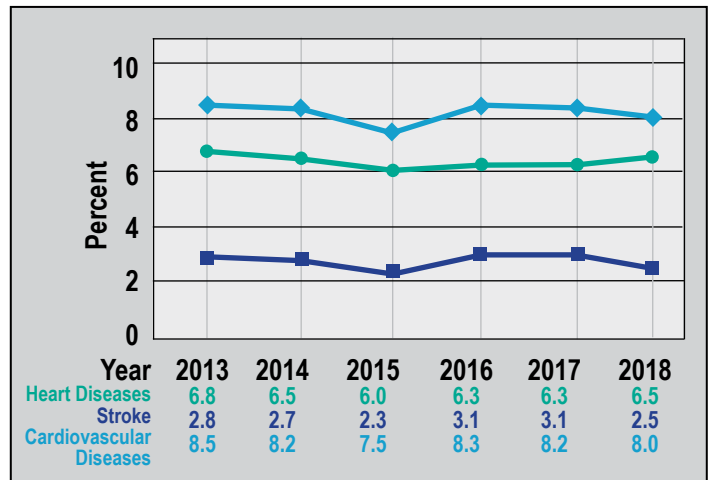
These results represent those who have survived these cardiovascular events and they may not match the actual prevalence of these conditions. For example, events ending in death on their first occurrence could not be considered here. Mortality data is required to complement the information from this survey.

FACT

In Iowa, males experienced higher rates of heart disease and cardiovascular disease than females.



Figure 10.1: Prevalence Among Adult Iowans of Heart Attack, Cardiovascular Disease and Stroke, 2013-2018



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Background

Tobacco use remains the leading cause of preventable disease and death in the United States. An estimated 34.2 million or 13.7% of all American adults currently smoke cigarettes (Centers for Disease Control and Prevention, 2019).

Tobacco use is known to cause heart disease, stroke, peripheral vascular disease, respiratory diseases such as COPD and asthma attacks as well as cancers of the lung, larynx, esophagus, pharynx, mouth, bladder, pancreas, kidney and cervix. In fact, smoking causes diseases in nearly every organ of the body (Centers for Disease Control and Prevention, 2019).

Consequences of smoking during pregnancy include spontaneous abortions, low birth weight babies and sudden infant death syndrome (SIDS).

Secondhand smoke (SHS) increases the risk of heart disease and lung cancer in adults. Recently, research has shown that exposure to SHS can cause strokes in those who do not smoke (Department of Health and Human Services, 2014). SHS also affects children by increasing the risk of lower respiratory tract infections and asthma and by decreasing pulmonary function. SHS in children can lead to ear infections, coughing, sneezing and shortness of breath (Centers for Disease Control and Prevention, 2019). According to the surgeon general there is no safe level of exposure to SHS due to individuals inhaling over 7,000 chemicals when exposed (U. S. Department of Health and Human Services, 2014).

Many steps are being taken to prevent the use of tobacco. Some of these include reducing exposure to environmental tobacco smoke, smoking prevention education, the restriction of minors' access to tobacco, the treatment of nicotine addiction (cessation) and working toward changing social norms and environments that support tobacco use. Efforts to shift social norms surrounding smoking include counter-advertising and promotion, product regulation and economic incentives against tobacco. In Iowa, smoking cessation programs such as Quitline Iowa offer free nicotine replacement therapy (NRT).

Tobacco Results

Current smoking is defined as smoking at least 100 cigarettes in a lifetime and smoking every day or some days during the past 30 days. Among adult Iowans in 2018, 16.6% reported being a current smoker. This was a lower rate than in 2017 (17.1%) and was similar to the rate in 2016, in which 16.7% of adult Iowans were current smokers (see Figure 11.1). The prevalence rate in 2018 was the lowest rate

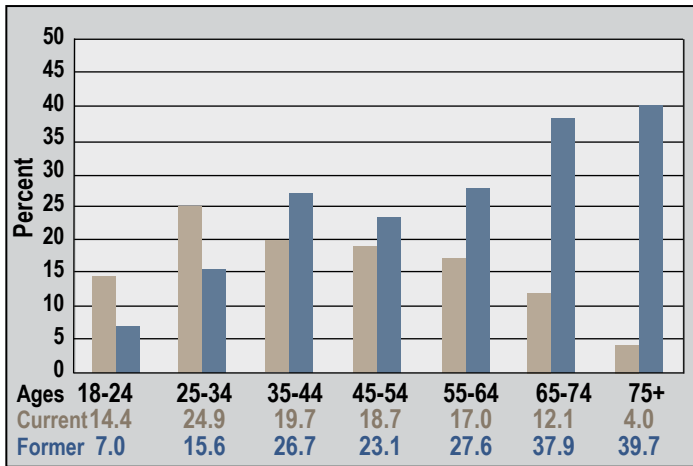
reported in the past 6 years. This being said, Iowans aged 18-34 had higher prevalence rates than in 2017, and those aged 35 and older reported slightly lower prevalence rates of current smoking than in 2017.

In 2018, more males reported being current smokers than females. The prevalence rate was higher for Other/Non-Hispanic populations, and the rate decreased as education and household income levels increased. Respondents with household incomes less than \$15,000 reported the highest prevalence rate of current smokers at 31.0%. In terms of age, cigarette smoking prevalence was highest among those between the ages of 25 and 34, and the rate of smoking declined after age 34 (see Table 11.1).

Table 11.1: Current Smoking in Iowa – 2018

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	16.6	(15.7-17.5)
Sex		
Male	18.0	(16.6-19.3)
Female	15.3	(14.0-16.6)
Race/Ethnicity		
White/Non-Hispanic	16.1	(15.2-17.1)
Black/Non-Hispanic	22.7	(15.2-30.3)
Other/Non-Hispanic	25.6	(19.2-32)
Hispanic	14.2	(10.6-17.9)
Age Group		
18 - 24	14.4	(11.3-17.4)
25 - 34	24.9	(21.9-27.9)
35 - 44	19.7	(17.3-22)
45 - 54	18.7	(16.3-21)
55 - 64	17.0	(15.1-19)
65 - 74	12.1	(10.4-13.9)
75+	4.0	(2.6-5.4)
Education		
Less than H.S.	28.8	(24.1-33.5)
H.S. or G.E.D.	21.8	(20-23.6)
Some Post-H.S.	16.0	(14.5-17.6)
College Graduate	7.3	(6.3-8.3)
Household Income		
Less than \$15,000	31.0	(26.3-35.8)
\$15,000 - 24,999	26.4	(23.3-29.5)
\$25,000 - 34,999	20.3	(16.7-23.8)
\$35,000 - 49,999	17.9	(15.2-20.5)
\$50,000 - 74,999	15.9	(13.7-18.1)
\$75,000+	10.2	(8.9-11.5)

Figure 11.1: Percentage of Current and Former Smokers by Age, 2018

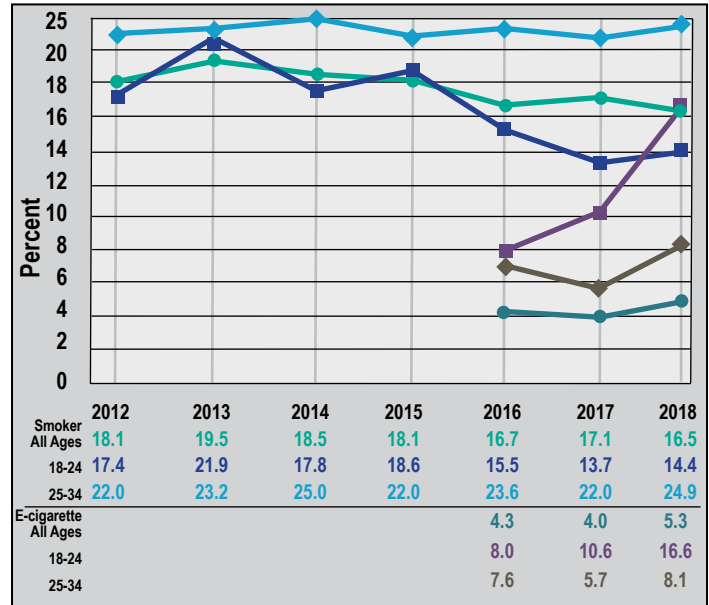


When asked about attempts to quit smoking, 51.8% or about 201,201 current lowan adult smokers reported they quit smoking for a day or more during the past year, which was a decrease from 52.7% in 2017. Quit attempts were higher among females, Black/Non-Hispanic populations and in younger smokers. lowans with the lowest level of education (less than a high school diploma or G.E.D.) and higher levels of household incomes (\$35,000 and above) reported lower rates of quit attempts.

About 24.4% of respondents were former smokers. This means that they had smoked at least 100 cigarettes in their lifetime but do not smoke now. More males than females were former smokers and the percentage of former smokers tended to increase with age (see Figure 11.1). Black/Non-Hispanics had a lower percentage of former smokers than other race/ethnicity groups. When asked how long it had been since they last smoked cigarettes, the majority of former smokers (57.9%) said 10 or more years.

In 2018, 24.0% of lowans said they had ever used an e-cigarette or other electronic vaping products, which is a 4.6% increase from 2017. Out of those who had every used at least one of these products, 5.3% were currently using e-cigarettes every day or some days, which was an increase from the figure in 2017 when 4.0% of lowans indicated that they currently used e-cigarettes. Use of e-cigarettes is particularly common among males, young adult lowans and those with less than a high school education (see Table 11.2). From 2017 to 2018, there was a 6.0% increase in the number of 18-24 year olds who were current e-cigarette

Figure 11.2: Current Smoking and E-Cigarette Use in Iowa by Year and Age – 2012-2018



users which corresponds to an additional 14,362 lowans who are current users of e-cigarettes or other electronic vaping products. People in this age group have significantly higher rates than those aged 25 and older. In terms of education, those with less than a high school diploma currently use e-cigarettes at higher rates than those with a college degree (8.0% vs. 1.8% respectively).

Figure 11.2 shows the overall slight downward trend in current cigarette smoking from 2012 to 2018 for all ages. Since 2012, the number of 18-24 year olds who are current cigarette smokers has decreased, but over the past year, there was an increase from 13.7% to 14.4%. In the same figure, we also see the emerging trend of youth e-cigarette/vaping product use, with the largest upward trend occurring in use among 18-24 year olds. The percentage of adult lowans aged 18 to 24 who are current e-cigarette/vaping product users has more than doubled since 2016, from 8.0% to 16.6%. We now see that a higher percentage of youth

FACT

In 2018, an additional 14,362 lowans aged 18-24 currently used e-cigarettes compared to 2017.

Tobacco *continued*

Table 11.2: Percentage of E-Cigarette Users in Iowa, 2018

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	5.3	(4.6-5.9)
Sex		
Male	6.7	(5.7-7.7)
Female	3.9	(3.1-4.7)
Race/Ethnicity		
White/Non-Hispanic	5.2	(4.5-5.9)
Black/Non-Hispanic	5.3	(1.1-9.5)
Other/Non-Hispanic	8.2	(4.2-12.2)
Hispanic	4.5	(1.8-7.1)
Age Group		
18 - 24	16.6	(13.3-19.9)
25 - 34	8.2	(6-10.1)
35 - 44	4.1	(2.9-5.4)
45 - 54	3.8	(2.6-5)
55 - 64	2.6	(1.8-3.4)
65+	0.6	(0.3-1.0)
Education		
Less than H.S.	8.0	(4.7-11.4)
H.S. or G.E.D.	6.4	(5.2-7.6)
Some Post-H.S.	6.3	(5.1-7.4)
College Graduate	1.8	(1.2-2.4)
Household Income		
Less than \$15,000	6.7	(4.3-9.6)
\$15,000 - 24,999	8.9	(6.6-11.1)
\$25,000 - 34,999	6.8	(4.1-9.4)
\$35,000 - 49,999	3.8	(2.3-5.3)
\$50,000 - 74,999	5.1	(3.6-6.5)
\$75,000+	3.6	(2.7-4.6)

aged 18-24 are currently using e-cigarettes/vaping products than regular cigarettes. Iowans aged 25-34 showed increases in both cigarette and e-cigarette use from 2017 to 2018, but 25-34 year olds continue to use cigarettes at much higher rates than they use e-cigarettes.

To assess use of other tobacco products besides cigarettes, all respondents were asked how often they currently use chewing tobacco, snuff, or snus. Approximately 5.3% indicated that they used either chewing tobacco, snuff or snus every day or some days. This was a slight decrease from the rate in 2017. In 2018, 2,649 adult Iowans used hookah every day or some days (0.1%). Other tobacco products used every day or some days by Iowans were cigars (1.7%) and a pipe (0.6%). Of smokers who had seen a doctor in the past year, 71.2% of them reported that the doctor had advised them to quit smoking. The most common form of assistance offered by doctors were medical resources (32.9%).

With respect to rules against smoking in their house, 87.0% of Iowans said they never allowed it.



FACT

Current smoking has declined from nearly **21** out of every **100** adults in 2005 to **14** out of every **100** adults in 2018.

FACT

1 out of every **4** current smokers were between the ages of **25** and **34**.

Comparison to other states

Across all states and District of Columbia, smoking prevalence ranged from a low of 9.0% to a high of 25.3%. Iowa's current smoking rate of 16.6% was slightly higher than the national median of 16.1% for all states. Regionally, the Midwest had the highest smoking rates in the country, with 16 out of every 100 adults (16.2%) being current smokers (Centers for Disease Control and Prevention, 2019).

Health Objectives for Iowa and the nation

As a nation, smoking rates continue to decline, with the national mean rate in 2018 being 13.7%. However with 34.2 million adult Americans still currently smoking, the Healthy People 2020 goal to reduce the percentage of smokers to 12.0% has still not been achieved. As a state, the current smoking prevalence of 16.6% in Iowa is still missing the mark for both the Healthy People 2020 target and the Healthy Iowans goal of reducing the state cigarette smoking rate to 15.0%. In 2018, Iowa fell far short of the Healthy People 2020 goal of 80% of current smokers attempt to quit in the past year with a rate of 51.8%.

Neither the Healthy People 2020 nor the Healthy Iowans objectives have documented specific goals to reduce the number of current e-cigarette users.



FACT

Cigarette smoking is the leading cause of preventable disease and death in the United States, accounting for more than 480,000, or every 1 in 5, deaths every year.

References

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Alcohol Consumption

Background

In the United States, alcohol is the top mind-altering substance used (American Addiction Centers, 2020). The National Institute of Alcohol Abuse and Alcoholism (NIAAA) defines binge drinking as a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 grams percent or above. This typically happens when men consume 5 or more drinks or women consume 4 or more drinks within about 2 hours (NIAAA, 2020). The Substance Abuse and Mental Health Services Administration (SAMHSA) defines binge drinking as 5 or more alcoholic drinks for males or 4 or more alcoholic drinks for females on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past month (NIAAA, 2020). Heavy drinking is defined by the SAMHSA as binge drinking on 5 or more days in the past month. The Centers for Disease Control and Prevention describes excessive drinking in the United States as engaging in binge drinking, heavy drinking and any drinking by women who are pregnant or under the legal drinking age of 21 (2019).

Millions of adults in the U.S. consume alcohol responsibly. Although the vast majority of people who drink excessively would not be expected to meet the clinical diagnostic criteria for having a severe alcohol use disorder (AUD; including alcohol dependence or alcoholism), there were still 14.4 million U.S. adults who had an AUD in 2018. Drinking too much costs the U.S. over \$240 billion each year, from loss of workplace productivity, health care costs and criminal justice expenditures (American Addiction Centers, 2020; Centers for Disease Control and Prevention, 2018); 75% of these costs are related to binge drinking (NIAAA, 2019).

Alcohol use changes the way you think and feel as well as influences your actions. Drinking lowers inhibitory control and disrupts decision-making abilities, rational thought and attention, increasing the risk of death from automobile crashes as well as recreational and on-the-job injuries (American Addiction Centers, 2020). There are both short-term and long-term health consequences that result from excessive alcohol use. These include impaired driving that can lead to injuries from motor vehicle crashes, violence, alcohol poisoning and risky sexual behaviors that can lead to unintended pregnancy or sexually transmitted diseases. Chronic alcohol use affects every organ and system of the body. The long-term health consequences of drinking

excessive amounts of alcohol over time include fetal alcohol syndrome, liver disease, cardiomyopathy, pancreatitis as well as an increased risk for certain cancers. Mental health can be affected negatively by drinking excessively, learning and memory functions can be impaired, and social problems may surface in the forms of lost productivity, trouble in family systems and job loss (Centers for Disease Control and Prevention, 2019).

Alcohol Consumption Results

The BRFSS survey defines a standard drink as one 12-ounce beer, one 5-ounce glass of wine, or a drink with one shot of hard liquor. In 2018, 58.1% of Iowans reported that they had at least one drink of alcohol in the past 30 days. On the days that they drank, 35.6% had an average of only one drink. About 13.4% reported drinking five or more drinks per day on the average, which was an increase of about 1.5% from 2017.



FACT

58.1% of Iowans reported that they had at least one drink of alcohol in the past **30** days.

Alcohol Consumption *continued*

Table 12.1: Binge Drinking and Heavy Drinking Among Iowa Adults, 2018

Demographic Group	Binge Drinking		Heavy Drinking	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	22.6	(21.6-23.7)	8.2	(7.5-8.9)
Sex				
Male	30.1	(28.5-31.7)	9.8	(8.8-10.9)
Female	15.1	(14.2-16.8)	6.7	(5.8-7.6)
Race/Ethnicity				
White/Non-Hispanic	23.2	(22.1-24.3)	8.7	(7.9-9.4)
Black/Non-Hispanic	19.7	(12.1-27.3)	4.5	(0.7-8.4)
Other/Non-Hispanic	17.0	(11.8-22.3)	6.9	(3.6-10.1)
Hispanic	19.5	(15.2-23.7)	4.1	(1.9-6.3)
Age Group				
18 - 24	34.1	(30.1-38.1)	11.7	(9.0-14.4)
25 - 34	35.4	(32.2-38.7)	9.9	(7.8-12.0)
35 - 44	30.9	(28.1-33.8)	9.8	(8.0-11.7)
45 - 54	24.8	(22.3-27.3)	9.8	(8.0-11.6)
55 - 64	15.6	(13.8-17.4)	7.2	(5.9-8.6)
65-74	7.6	(6.1-9.0)	5.2	(4.1-6.4)
75+	2.3	(1.3-3.2)	1.9	(1.0-2.7)
Education				
Less than H.S.	13.5	(9.9-17.1)	5.3	(2.9-7.7)
H.S. or G.E.D.	20.7	(19.0-22.5)	8.4	(7.2-9.6)
Some Post-H.S.	26.4	(24.4-28.4)	9.9	(8.5-11.2)
College Graduate	22.8	(21.1-24.6)	6.8	(5.8-7.9)
Household Income				
Less than \$15,000	17.6	(13.4-21.8)	8.1	(5.1-11.1)
\$15,000- 24,999	17.8	(15.0-20.7)	8.2	(6.1-10.4)
\$25,000- 34,999	19.7	(16.1-23.4)	7.3	(5.0-9.6)
\$35,000- 49,999	23.6	(20.7-26.5)	7.1	(5.4-8.8)
\$50,000- 74,999	24.6	(21.9-27.2)	9.7	(8.0-11.5)
\$75,000+	29.7	(27.8-31.7)	9.6	(8.3-11.0)

In our analysis, heavy drinking was defined as an average of greater than 14 drinks per week for men and 7 drinks per week for women. According to this definition, 8.2%, or 190,310, of adult Iowans were heavy drinkers (see Table 12.1). Over the past 6 years, the lowest prevalence rate was reported in 2015 (5.9%), but the trend has been steadily increasing over the last few years, with 2018's rate being the highest since 2012. In regards to binge drinking, after hitting a low of 19.8% in 2015, the prevalence rate has increased to a high of 22.6% in 2018, which is also the highest reported rate over the past 6 years (see Table 12.1 and Figure 12.1).

Heavy drinking among men is significantly higher than among women. In 2018, 9.8% of men were considered to be heavy drinkers, while 6.7% of women reported being heavy drinkers. Older people, people with less than a high school education, and Iowans with household incomes between \$25,000 and \$49,999 reported a lower prevalence of heavy drinking (see Table 12.1).

Among adult Iowans, 22.6% engaged in at least one binge drinking episode in the 30 days prior to participating in the survey. In 2018, a higher percentage of Whites binged than other racial and ethnic groups. Iowans with higher education, most notably those with some college education, and those with higher incomes tended to engage in binge drinking (see Table 12.1). Twice as many males binge drank than females: 30.1% and 15.1% respectively. Men binged more than women at all ages. The highest prevalence rates of binge drinking occurred between the ages of 25 and 34 for males (45.5%) and then decreased with age to 3.5% for those 75 years old and older (see Figure 12.2). On the other hand, females had the highest prevalence of binge drinking between the ages of 18 and 24 (29.8%) and then decreased their binge drinking over time.

Compared to the reported rates in 2017, males had higher prevalence rates of binge drinking in all age groups except 75+. In 2018, females aged 35-64 had lower prevalence rates than in 2017, while those aged 25-34 and 65+ had higher rates than those reported in 2017.

FACT

Twice as many males than females were binge drinkers in 2018.

Alcohol Consumption *continued*

Figure 12.1: Binge and Heavy Drinking by Year, 2012-2018

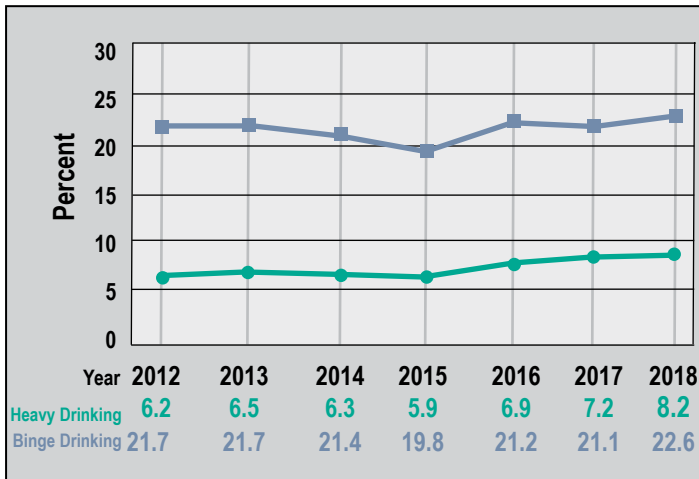
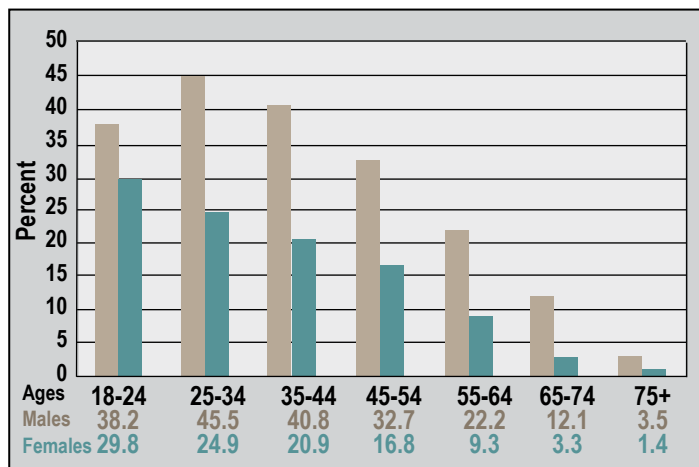


Figure 12.2: Binge Drinking among Iowa Adults by Age and Sex, 2018



FACT

The highest rates of binge and heavy drinking over the past 6 years were reported in 2018.

Comparison with Other States

In 2018, rates of binge drinking in the 50 states and the District of Columbia ranged from 10.6% to 24.4% with a median of 16.2%. Iowa's prevalence rate of 22.6% is well above the median. There were only two states, the District of Columbia and Wisconsin, with a higher prevalence of reported binge drinking than Iowa in 2018.

The prevalence of adults reporting heavy drinking in the 50 states and the District of Columbia ranged from 3.8% to 8.8% in 2018. Iowa's rate of 8.2% is well above the median of 6.5%. Iowa had the 4th highest prevalence rate of heavy drinking, with only Hawaii, Oregon and South Dakota having higher rates.

The Healthy People 2020 target of reducing the proportion of persons aged 18 or older engaging in binge drinking during the past 30 days to 24.2% was met by Iowa, which reported a prevalence rate of 22.6%, though rates in Iowa have shown an increasing trend in recent years.

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Breast & Cervical Cancer Screening

Background

Breast cancer is a malignant (cancerous) tumor that starts from cells of the breast. The disease occurs mainly in women, but men can get breast cancer as well (American Cancer Society, 2018).

Except for skin cancers, breast cancer is the most common cancer among women. After lung cancer, it is the second leading cause of cancer death in women. There was an estimated 266,120 new cases of female breast cancer in 2018 (American Cancer Society, 2018). It was also estimated that about 70,500 adult women would die from breast cancer this year, with the majority of deaths occurring in those aged 45 and older. The American Cancer Society (2018) estimated 2,560 new cases of female breast cancer diagnosed and 370 deaths in females due to breast cancer in Iowa. For 2018, 411 women died from breast cancer which was higher than the estimated 370 deaths from breast cancer (American Cancer Society, 2018; Iowa Department of Public Health, 2019). Female breast cancer incidence rates have increased slightly in recent years (especially since 2004), while death rates have held stable in women aged 50 and younger and declined in older women. This is likely the result of improvements in detecting the cancer earlier (awareness and screening) as well as improved treatment (American Cancer Society, 2018). The decline has slowed in recent years, and advancements in detection and treatment may not benefit all women equally.

There are many factors that increase the risk of breast cancer. The chance of getting breast cancer increases with age (American Cancer Society, 2018). Individual lifestyle factors that increase the risk for developing breast cancer include alcohol use, obesity after menopause, lack of physical activity, never having children or having a first child after age 30, not breastfeeding (especially if it's continued for a year or more), birth control (especially more recent use) and postmenopausal hormone therapy. Other than age, non-lifestyle related risk factors include being born female, inheritance of certain genes (BRCA1 or BRCA2), a family or personal history of breast cancer, race and ethnicity, height, having dense breast tissue, having certain benign breast conditions, having chest radiation as a teen or young adult and a long menstrual history. However, many women develop breast cancer without having any of the usual known risk factors. For example, the majority of women

who are diagnosed with breast cancer do not have a family history of it. However, those who have close blood relatives with breast cancer have a much higher risk; having a biological mother, sister or daughter with breast cancer doubles a woman's risk (American Cancer Society, 2019).

Early detection of breast cancer is key to surviving the disease, and regular screening is key to detecting the disease early. There may be no detectable symptoms apart from screening until the disease is quite advanced.

The standard method for early detection of breast cancer is mammography. Mammography involves an x-ray examination of the breast and can detect abnormalities in the breast before they can be felt. Because the risk of developing breast cancer increases as women get older, mammography, with its increased sensitivity, is recommended for older women.

There has lately been some disagreement about mammography recommendations. Two agencies making recommendations are the American Cancer Society (2020) and the U.S. Preventive Services Task Force (2016). Despite small differences on exactly when to start and how often mammography screening should occur, the following are generally suggested:

- Women, age 45 or 50 years and older, should be screened every one to two years with mammography.
- Women at higher than average risk of breast cancer should seek expert medical advice about whether they should begin screening before age 45, the frequency of screening via mammography as well as if they should also seek additional methods of testing.

Most cancer organizations agree that women should be familiar with the appearance and feel of their breasts and report any changes immediately to a health care professional.

FACT

Although detection of breast cancer from mammography is not guaranteed, this screening method for breast cancer can be life-saving.

Breast & Cervical Cancer Screening *continued*

Breast Cancer Screening Results

In 2018, when asked if they had ever had a mammogram, 92.4% of all female Iowans ages 40 and older reported having one. Women in their 40s had significantly lower rates of ever having a mammogram than older ones. Those who had less than a high school diploma or G.E.D. tended to have lower rates of ever having a mammogram (see Table 13.1).

Table 13.1: Use of Mammography by Iowa Women, 2018

Demographic Groups	Ever had a Mammogram		Had Mammogram in Last 2 Years	
	Age 40 and over			
	%	C.I. (95%)	%	C.I. (95%)
Total Females	92.4	(91.4-93.4)	74.0	(72.4-75.7)
Race/Ethnicity				
Non-Hispanic White	93.0	(92.0-94.0)	74.3	(72.6-76)
Non-White or Hispanic	87.4	(82.4-92.5)	71.8	(64.6-79)
Age Group				
40 – 54	84.9	(82.4-87.3)	69.5	(66.3-72.7)
55 – 64	96.2	(94.8-97.5)	82.0	(79.2-84.7)
65 – 74	96.5	(95.1-97.8)	81.1	(78.3-84.0)
75+	96.5	(95.0-98.0)	62.4	(58.2-66.6)
Education				
Less than H.S.	89.1	(84.2-94.1)	61.1	(52.7-69.4)
H.S. or G.E.D.	93.1	(91.4-94.8)	70.8	(67.8-73.7)
Some Post-H.S.	93.2	(91.4-95.0)	76.6	(73.7-79.5)
College Graduate	92.1	(90.3-93.9)	78.2	(75.6-80.8)
Household Income				
Less than \$15,000	92.3	(88.7-95.9)	66.3	(58.8-73.8)
\$15,000- 24,999	92.1	(89.3-94.9)	60.1	(55.0-65.1)
\$25,000- 34,999	92.0	(88.0-96.0)	75.6	(69.7-81.5)
\$35,000- 49,999	92.9	(90.1-95.8)	75.6	(71.1-80.0)
\$50,000- 74,999	92.6	(90.1-95.2)	78.4	(74.5-82.3)
\$75,000+	92.3	(90.4-94.3)	80.0	(77.2-82.9)

When asked if they had a mammogram in the past two years, 74.0% of all Iowa women over age 40 said they had. For women between the ages of 50 and 74, the figure was 80.8%. Women with a higher education level and those with a higher household income tended to have higher percentages of having a mammogram in the past two years (see Table 13.1).

Comparison with Other States

In all states and the District of Columbia, the percentage of women aged 40 and older who had a mammogram in the past two years ranged from 61.0% to 79.7%. For those between the ages of 50 and 74, the percentages ranged from 67.0% to 87.0%. Among both age groups, Iowa's rates were the third highest in the Midwest, behind South Dakota and Minnesota.

Health Objectives for Iowa and the Nation

The national health objectives for Healthy People 2020 include an increase to at least 81.1% of women age 40 and older who have had a mammogram within the preceding two years. Iowa falls short of this goal with 74.0%. The Healthy Iowans goal is to increase the percent of women between the ages of 50 and 74 years of age who have had a mammogram in the past two years to 88.0% by 2020. Iowa falls short here as well with 80.8%.

Cervical Cancer Screening

Background

Cancer of the cervix begins in the lining of the cervix, located in the lower part of the uterus (womb). Cervical cancer does not occur automatically. For example, cells change from normal to pre-cancer to cancer. This can take a number of years, although sometimes it happens more quickly. These changes may go away without any treatment. More often than not, treatment is necessary to keep them from changing into true cancer in 2018 (American Cancer Society, 2017). Cervical cancer is very much treatable if found early.

Approximately 13,240 new cases of invasive cervical cancer and 4,170 cervical cancer-related deaths were projected to occur in the United States (American Cancer Society, 2018). Rates of U.S. women diagnosed with invasive cervical cancer declined by 50% from 1975 to 2014, but the decline has slowed in more recent years. Rates from 2005 to 2014 have held steady. Similar to the declines in incidence rates, declines in mortality rates have continued to decline, but at a slower pace.

There are risk factors for cervical cancer with the most common being infection from the human papillomavirus (HPV), which is often, though not always, transmitted

Breast & Cervical Cancer Screening *continued*

sexually. Not all women infected with HPV get diagnosed with cervical cancer. A vaccine now exists for HPV. Other risk factors are smoking, HIV infection, giving birth to 3 or more children, having multiple sexual partners, chlamydia, diets low in fruits and vegetables and a family history of cervical cancer (American Cancer Society, 2019).

To prevent cervical cancer, the American Cancer Society recommends two things: getting the HPV vaccine if eligible and being screened for cervical cancer. There are 2 tests that are available and include the Papanicolaou (Pap) test or the HPV test. The Pap test allows the cellular changes in the cervix to be detected when they are precancerous or at an early stage. Cells obtained from the Pap test can also be used in the HPV test, which checks for evidence of HPV, a condition that can lead to pre-cancers. If a pre-cancer is found as a result of a Pap or HPV test, it can be treated, which keeps it from developing into full cancer. Importantly, most invasive cancer of the cervix is found in women who do not have a history of regular Pap testing (American Cancer Society, 2020).

The American Cancer Society recommends that cervical cancer screening begin no later than 21 years of age. From ages 21 to 29, it is recommended that women receive a Pap test every 3 years and not an HPV test unless it is necessary after an abnormal result from the Pap test. From ages 30 to 65, it is recommended that women be screened with both a Pap and HPV test every 5 years, as long as the testing yields normal results. Along the same lines, it is reasonable that women receive a Pap test only every 3 years for women aged 30-65. Women over the age of 65 who have had normal test results over the past 10 years should cease cervical cancer screening and once stopped should not start again. Screening is not necessary for those who have had a total hysterectomy.

Table 13.2: Proportion of Iowa Women Having Pap Test, 2018

Demographic Groups	Ever had a Pap test		Had Pap test in last 3 years Age 21 - 65	
	%	C.I. (95%)	%	C.I. (95%)
Females	90.4	(89.0-91.8)	81.1	(79.2-83.0)
Race/Ethnicity				
Non-Hispanic White	91.2	(89.8-92.6)	80.9	(78.9-82.9)
Non-White or Hispanic	82.8	(77.6-89.9)	81.6	(76.3-87.0)
Age Group				
18-24	46.8	(39.9-53.7)	66.0	(57.4-74.6)
25-34	95.5	(93.6-97.3)	85.2	(81.5-88.8)
35-44	97.4	(96-98.8)	85.1	(81.9-88.2)
45-54	98.6	(97.3-99.8)	86.3	(82.9-89.8)
55-64	98.2	(97.2-99.2)	75.7	(72.1-79.3)
65-74	98.3	(97.4-99.2)	78.8	(67.4-90.3)
75+	91.5	(89.0-94.0)	-	-
Education				
Less than H.S.	80.4	(71.7-89.0)	72.0	(62.0-81.9)
H.S. or G.E.D.	88.4	(85.9-90.8)	76.9	(72.9-80.9)
Some Post-H.S.	89.5	(87.1-81.8)	80.0	(76.5-83.4)
College Graduate	96.5	(95.3-97.7)	86.7	(84.4-89.0)
Household Income				
Less than \$15,000	88.3	(83.7-92.9)	79.7	(72.1-87.3)
\$15,000- 24,999	86.3	(82.4-90.1)	73.5	(67.4-79.6)
\$25,000- 34,999	87.9	(80.9-94.8)	83.9	(77.8-89.9)
\$35,000- 49,999	92.4	(89.1-95.7)	79.6	(74.3-84.9)
\$50,000- 74,999	92.9	(89.8-96.0)	81.5	(77.0-86.0)
\$75,000+	95.9	(94.1-97.7)	86.1	(83.3-88.9)

FACT

Although more than **4** out of **5** women aged 21 to 65 have had a Pap test within the past **3** years, this still does not meet the goal for our state or nation.

Breast & Cervical Cancer Screening *continued*

In 2018, 90.4% of adult Iowan women had received a Pap test in their lifetime. Those who were White, had higher levels of education, and higher household incomes tended to have indicated that they had ever received a Pap test (see Table 13.2). When asked if they had received a Pap test within the last 3 years, among those aged 21-65 years, 81.1% indicated having received one. Those aged 25-54 had significantly higher rates of receiving a Pap test within the last 3 years than those younger than 18-24 year olds and those aged 55-64. Women aged 21-65 who were college graduates had significantly higher rates of indicating they had received a Pap test within the past 3 years than those with lower levels of education. Finally, women between the ages of 21 and 65 who had received a Pap test within the last 3 years tended to have a higher annual household income (see Table 13.2).

Comparison with Other States

In all 50 states and the District of Columbia the percentage of women age 21 to 65 who have had a Pap test in the past 3 years ranged from 70.7% to 85.1%. Iowa's figure of 81.1% is almost identical to the median for the nation of 81.2% (Centers for Disease Control and Prevention, 2019).

Health Objectives for Iowa and the Nation

For Healthy People 2020, the goal for the proportion of women aged 21-65 who have had a Pap test in the last 3 years is 93.0%, and the Healthy Iowans goal is 92.0% achieved by 2020. Iowa's rate of 81.1% falls over 10 percentage points short of these goals.

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Colorectal Cancer Screening

Background

Colorectal cancer is the second leading cause of cancer-related deaths in both Iowa and the United States.

Colorectal cancer occurs in the colon or rectum. It may also be referred to as colon cancer or rectal cancer, depending on where the cancer starts. The colon is the large intestine or large bowel, and the rectum refers to the passageway that connects the colon to the anus (American Cancer Society, 2018).

Colorectal cancer usually develops from abnormal growths known as polyps within the inner lining of the colon and/or rectum. In the early stages there are often no symptoms. Being screened can detect polyps, so that they can be removed before turning into cancer (Centers for Disease Control and Prevention, 2019).

An estimated 97,220 new cases of colon and 43,030 new cases of rectal cancer are expected to exist in the United States in 2018 (American Cancer Society, 2018). There are estimated to be 50,630 deaths from this disease (American Cancer Society, 2018). Incidence and mortality rates have been decreasing for most of the last two decades. In more recent years, these rates have continued to decline for those ages 55 and older, but have increased for those younger than age 55. The decline in incidence rates is likely on some level due to an increase in screening and improved treatment methods. The decline in mortality rates is due in part to the latter as well as decreases in incidence rates.

Although the exact causes of colorectal cancer are unknown, risk factors include:

- **Age** – Over 90% of colorectal cancer cases occur in people age 50 and older, and the risk of developing the disease increases with age.
- **Family History** – Those who have family members diagnosed with colorectal cancer or pre-cancerous polyps.
- **Personal History** – Personal history of colorectal cancer/polyps and those who have inflammatory bowel disease.

Modifiable risk factors include the use of tobacco, excessive alcohol use, being overweight or obese, physical inactivity and consuming a diet consisting of: low fruit and vegetable intake, processed meats and low-fiber and high-fat foods.

The U.S. Preventive Services Task Force (2019) recommends that men and women who do not show symptoms and who are at an average risk of getting colorectal cancer begin regular screening for colorectal cancer at age 50. The type of testing should be decided upon with a health care professional. If everyone ages 50 to 75 had regular screening, approximately 20 to 24 deaths from colorectal cancer per 1,000 people could be prevented. Recommended screening options include the following:

- Annual screening with high-sensitivity fecal occult blood testing (FOBT) or fecal immunochemical testing (FIT) – both are non-invasive and can be done at home
- Sigmoidoscopy every 5 years or every 10 years with a FIT annually
- Colonoscopy every 10 years

The advantages of the FOBT and the FIT include being simple, not expensive to use and non-invasive. Both at-home tests are able to detect blood in the stool. The sigmoidoscopy and colonoscopy are both performed by a medical professional. The colonoscopy has an advantage over the other tests because it can both detect and remove polyps, though it is an invasive procedure (U.S. Prevention Services Task Force, 2019).

Colorectal Cancer Screening Results

In 2018, 28.3% percent of Iowans 50 years old or older reported ever using a home blood-stool testing kit (FOBT). Of those who had ever had the test, 36.9% had it within the past two years. Although less people had taken the test in 2018 than in 2016 (31.4%), more had taken the test within the past 2 years in 2018 than in 2016, when 33.6% had taken it.

In 2018, 74.3% of Iowans 50 years old or older reported ever having a sigmoidoscopy or colonoscopy screening test. This is an increase from 72.5% found in 2016. In 2016, the percentage of males and females who had received a screening test were virtually the same, i.e. 72.6% and 72.5% respectively. In 2018, males remained at 72.6% while females had a higher percentage (75.9%). Respondents with more education tended to have higher prevalence rates of having either of these tests.

Colorectal Cancer Screening *continued*

Having a colonoscopy was far more common than having a sigmoidoscopy (97.9% compared to only 2.1% for sigmoidoscopy). Nearly everyone who had one of these tests had a colonoscopy.

To determine the percentage of lowans being adequately screened the percent of respondents who had either screening method within the proper time interval was calculated for individuals with normal screening results. The result was that 71.5% of lowans 50 to 75 years old had at least one of the colorectal screening methods within the prescribed time period. This is an increase from 68.6% that was reported in 2016. Respondents who had less than a high school education had the lowest percentage (58.4%), while college graduates had the highest (77.7%; see Table 14.1).

Table 14.1: Prevalence of Colorectal Cancer Screening in lowans Meeting Recommendations, 2018

Demographic Groups	Met Screening Criteria from any Method	
	%	C.I. (95%)
Total	71.5	(70-73)
Sex		
Male	68.8	(66.5-71.0)
Female	74.2	(72.1-76.2)
Education		
Less than H.S.	58.4	(50.4-66.4)
H.S. or G.E.D.	66.7	(64.0-69.5)
Some Post-H.S.	74.1	(71.4-76.7)
College Graduate	77.7	(75.3-80.1)
Household Income		
Less than \$15,000	66.5	(59.5-73.5)
\$15,000- 24,999	63.1	(58.1-68.0)
\$25,000- 34,999	69.1	(63.5-74.8)
\$35,000- 49,999	71.3	(67.1-75.4)
\$50,000- 74,999	74.1	(70.6-77.6)
\$75,000+	75.2	(72.7-77.8)

Comparison with Other States

In 2018, the proportion of people in all states and the District of Columbia who met recommendations for colorectal cancer screening ranged from 58.8% to 77.1%. Iowa's prevalence rate of 71.5% is higher than the median of 69.7%.

Health Objectives for Iowa and the Nation

The Healthy People 2020 goal is for 70.5% of people age 50 to 75 to be screened for colorectal cancer by the year 2020. Iowa's figure of 71.5% meets this goal. On the other hand, the Healthy lowans goal of increasing the percentage of men and women ages 50 to 75 who are up to date on their colorectal cancer screening to 80.0% by the year 2018 was not met.

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Other Cancer Prevalence and Screening

Background

Cancer is a very common condition and the second most common cause of death in the United States, following heart disease. Cancer occurs when a group of cells grows out of control and has the ability to take over normal cells (American Cancer Society, 2015). Cancer may arise almost anywhere in the body, though some locations are more common than others. Overall, skin cancer is the most common type of cancer. Among men, prostate cancer is most common, only behind skin cancer. Other common types include lung, breast and colorectal cancer.

Though cancer is a common disease, more and more people are surviving cancer. The American Cancer Society predicted that in 2018 there would be an estimated 1,735,350 new cancer cases diagnosed and 609,640 cancer deaths in the U.S. (American Cancer Society, 2018). Despite this, death rates for all cancer types have declined since 1991 when the cancer death rate peaked at 215 deaths from cancer per 100,000 people by about 26% by 2015 (159 cancer deaths per 100,000 people). Progress towards lowering the death rate for those who are diagnosed with cancer is largely contributed to by reductions in smoking as well as vast improvements in early cancer detection and treatment methods. The decline in cancer death rates over the last 2 decades has resulted in over 2.6 million fewer deaths from cancer from 1991 to 2016 (American Cancer Society, 2019).

Skin and Prostate Cancer Screening Results

In 2018, 6.5% of adult lowans had ever been told they had **skin cancer**, which was an increase from reported skin cancer in 2016 when 5.6% of lowans reported having had it (see Table 15.1). In 2018, 7.1% reported having been told they had some **other type of cancer**, a prevalence rate that has remained unchanged since 2016.

Skin cancer behaves somewhat differently from other types of cancers, which themselves may vary in prevalence and prognosis according to type. In Iowa, skin cancer was more common among White Non-Hispanics, and the prevalence rate was similar among males and females. Other cancers were more common among females and adult lowans with lower household incomes. Most cancers are more common with increased age, and this was the case for adult lowans in 2018. In general, the prevalence rate for having skin cancer or other cancers increased with age. The highest

prevalence of ever having skin or other cancers was reported among those age 75 and over (22.4% and 19.1% respectively).

Another type of cancer screening that was asked about was **prostate cancer**. Screening for this cancer has been controversial since there are many false positive outcomes that can lead to unnecessary treatment.

For Iowa men age 40 and older, 39.8% had been talked to by a doctor or health professional about the advantages of a prostate specific antigen (PSA) screening test, while only 15.9% had been talked to about the disadvantages. These figures have both declined since 2016 when 57.0% had been talked to by a doctor or health professional about the advantages and 22.4% had been talked to about the disadvantages. The test was recommended by about 1 out of 3 doctors (36.0%), which was an 11.8% decrease since 2016, and 91.2% of those for whom it was recommended had the test. This was an increase from 2016's figure of 88.5% getting the test after it had been recommended to them.

FACT

The majority of adult lowans who were recommended by a doctor or health professional to have a PSA did have the test (91.2%).



Other Cancer Prevalence and Screening *continued*

Table 15.1: Prevalence of Iowans Reporting Ever Having Cancer, 2018

Demographic Groups	Ever Had Skin Cancer		Ever Had Other Cancer	
	%	C.I. (95%)	%	C.I. (95%)
Total	6.5	(6.0-7.0)	7.1	(6.5-7.6)
Sex				
Male	6.3	(5.6-7.0)	5.4	(4.7-6.0)
Female	6.7	(6.0-7.5)	8.7	(7.8-9.5)
Race/Ethnicity				
White/Non-Hisp.	7.2	(6.6-7.7)	7.4	(6.9-8.0)
Black/Non-Hisp.	0.9	(0.0-2.7)	3.6	(0.6-6.6)
Other/Non-Hisp.	3.8	(1.5-6.1)	6.4	(3.1-9.6)
Hispanic	0.7	(0.0-1.4)	3.1	(1.3-4.9)
Age Group				
18-24	1.1	(0.2-2.0)	0.7	(0.0-1.3)
25-34	0.5	(0.1-0.9)	2.2	(1.2-3.2)
35-44	1.1	(0.5-1.8)	2.0	(1.2-2.8)
45-54	4.9	(3.6-6.1)	5.8	(4.4-7.3)
55-64	8.5	(7.2-9.9)	9.2	(7.7-10.7)
65-74	13.5	(11.8-15.2)	15.5	(13.7-17.4)
75+	22.4	(19.7-25.2)	19.1	(16.6-21.6)
Education				
Less Than H.S.	4.6	(2.8-6.4)	6.8	(4.4-9.3)
H.S. or G.E.D.	6.5	(5.6-7.4)	8.2	(7.2-9.3)
Some Post-H.S.	6.7	(5.7-7.6)	6.4	(5.5-7.2)
College Graduate	7.1	(6.2-8.0)	6.7	(5.8-7.6)
Household Income				
Less than \$15,000	5.0	(3.1-6.9)	9.7	(6.8-12.7)
\$15,000- 24,999	6.7	(5.2-8.2)	9.4	(7.6-11.3)
\$25,000- 34,999	5.5	(4.0-7.1)	5.2	(3.7-6.7)
\$35,000- 49,999	6.8	(5.5-8.2)	8.7	(7.1-10.3)
\$50,000- 74,999	6.5	(5.2-7.8)	6.4	(5.1-7.6)
\$75,000+	6.3	(5.4-7.2)	5.4	(4.6-6.2)

References

1. American Cancer Society. (2015). Cancer Basics. 2015. Available at <https://www.cancer.org/cancer/cancer-basics/what-is-cancer.html>.
2. American Cancer Society. (2018). Cancer Facts & Figures 2018. Atlanta: American Cancer Society.
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FACT

The risk of having skin or other cancer generally increases with age.



Disability

Background

The World Health Organization's International Classification of Functioning, Disability and Health (2001) defines disability as an umbrella term for impairments, activity limitations and participation restrictions. Disability is the interaction between individuals with a health condition (e.g. cerebral palsy, Down's syndrome, or depression) and personal and environmental factors (e.g. negative attitudes, inaccessible transportation and public buildings, and limited social supports). Impairment is defined as "any loss or abnormality of psychological, physiological, or anatomical structure or function" (World Health Organization, 2001).

Chronic physical, mental, and emotional conditions can limit the ability of adults to carry out important activities such as working and doing everyday household chores. According to data from the 2016 Behavioral Risk Factor Surveillance System, one in four people in the United States has a disability (26.0%; 61 million people) that prevented or limited their ability in some way (Centers for Disease Control and Prevention, 2020).

The number of people living with a disability is on the rise, in part by the aging population and an increase in chronic health conditions around the world. Currently, if services for those with a disability are available, they tend to lack the necessary resources and quality required to provide adequate care and relief. There is a need to increase disability services in primary healthcare settings, and more specifically in rehabilitation interventions. (World Health Organization, 2020). Having a disability is not necessarily a barrier to good general health in unrelated areas.

Many disabled Americans use Assistive Technology Devices (ATDs) to accommodate mobility impairments and other sensory and mental impairments. These can allow a person with a disability to work and otherwise live an independent life.

Disability Results

The most recent standard of determining disability in adult lowans requires a "yes" response to at least one of the following six items. In 2018, 6.1% of lowans said they were deaf or had trouble hearing; 3.0% said they were blind; 9.1% said they had serious difficulty concentrating, remembering, or making decisions; 10.9% said they had serious difficulty

walking or climbing stairs; 2.2% said they had difficulty dressing or bathing; 5.0% said they had difficulty doing errands alone such as visiting a doctor's office or shopping because of a physical, mental, or emotional condition. Using the answers to these questions, the "new" method for determining disability produced a result of 22.5%, indicating that over 1 in 5 adult lowans had a disability. This figure was lower than in 2017 but similar to the rate reported in 2016 (see Figure 16.1).

Figure 16.1: Adults with Disability in Iowa Trend, 2016-2018 New Method

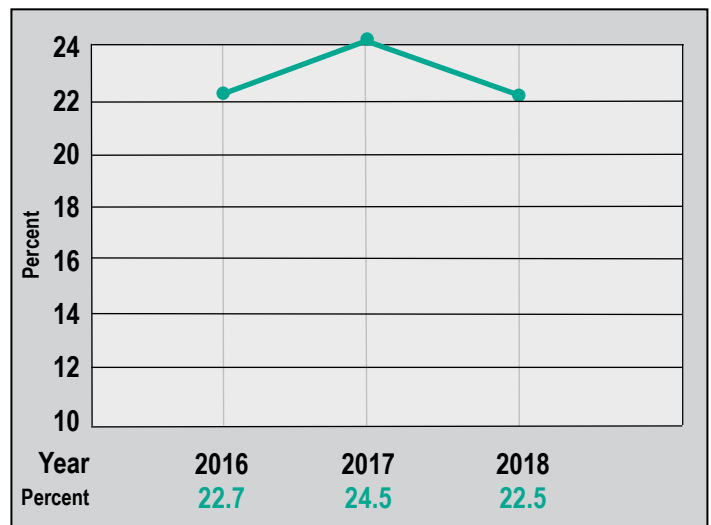


Table 16.1 shows the results of the most recent disability determination method. Females, older people, people with less education, and people with lower household incomes reported higher rates of disability. Those with household incomes of less than \$15,000 reported the highest percentage of disability (49.1%). Many disabled people are unable to work due to their disability. Over half of those who reported a disability were 75 years of age or older (51.4%). This age group of the population will continue to grow as the Baby Boomer cohort reaches retirement age and beyond.

Disability *continued*

Arthritis is the leading cause of work disability in the United States. Arthritis is the name given to a group of over 100 different rheumatic diseases and conditions that result in pain and reduction of functionality in and around the joints. The most common are osteoarthritis, rheumatoid arthritis, lupus, fibromyalgia and gout (Centers for Disease Control and Prevention, 2020). Arthritis may be caused by a wearing down of cartilage, a change in bone composition, or inflammation in the joints.

In 2018, a doctor had told 25.4% of Iowans that they had some form of arthritis. This is slightly higher than in 2017 when 24.7% had arthritis (see Figure 16.2). The percentage of adult Iowans reporting arthritis is higher than the

Table 16.1: Percent Reporting Being Disabled, 2018

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	22.5	(21.6-23.5)
Sex		
Male	21.5	(20.2-22.9)
Female	23.5	(22.1-24.9)
Race/Ethnicity		
White/Non-Hispanic	22.2	(21.2-23.2)
Black/Non-Hispanic	24.8	(17.1-32.5)
Other/Non-Hispanic	26.1	(20.2-32.1)
Hispanic	22.5	(17.9-27.0)
Age Group		
18-24	14.8	(11.8-17.7)
25-34	14.2	(11.8-16.6)
35-44	14.4	(12.2-16.5)
45-54	18.8	(16.5-21.1)
55-64	24.0	(21.8-26.1)
65-74	32.6	(30.1-35.1)
75+	51.4	(48.1-54.7)
Education		
Less Than H.S.	36.3	(31.4-41.2)
H.S. or G.E.D.	28.5	(26.7-30.4)
Some Post-H.S.	21.0	(19.4-22.7)
College Graduate	12.9	(11.6-14.1)
Household Income		
Less than \$15,000	49.1	(44.0-54.2)
\$15,000- 24,999	41.1	(37.7-44.5)
\$25,000- 34,999	29.7	(26.0-33.5)
\$35,000- 49,999	23.2	(20.5-25.9)
\$50,000- 74,999	14.8	(12.8-16.8)
\$75,000+	10.0	(8.8-11.2)

percentage reporting disability, indicating not all people diagnosed with arthritis find it to be a limitation.

Table 16.2: Percent Having Been Told by a Doctor They Had Some Form of Arthritis, 2018

Demographic Groups	Told by Doctor You Have Arthritis	
	%	C.I. (95%)
Total	25.4	(24.5-26.5)
Sex		
Male	21.5	(20.2-22.8)
Female	29.3	(27.8-30.7)
Race/Ethnicity		
White/Non-Hispanic	26.6	(25.5-27.6)
Black/Non-Hispanic	21.9	(15.2-28.7)
Other/ Non-Hispanic	23.9	(18.3-29.4)
Hispanic	10.3	(7.2-13.5)
Age Group		
18-24	4.0	(2.3-5.8)
25-34	7.7	(5.8-9.6)
35-44	13.5	(11.4-15.5)
45-54	25.9	(23.4-28.5)
55-64	36.4	(34.0-38.8)
65-74	48.9	(46.2-51.5)
75+	53.3	(50.0-56.5)
Education		
Less Than H.S.	31.5	(26.0-37.0)
H.S. or G.E.D.	29.8	(27.6-32.0)
Some Post-H.S.	25.0	(22.8-27.2)
College Graduate	18.4	(16.6-20.2)
Household Income		
<\$15,000	32.9	(28.4-37.3)
\$15,000- 24,999	34.6	(31.5-37.8)
\$25,000- 34,999	31.4	(27.6-35.3)
\$35,000- 49,999	27.3	(24.5-30.0)
\$50,000- 74,999	24.9	(22.5-27.2)
\$75,000+	17.4	(16.0-18.9)

FACT

More than **1** out of **5** adult Iowans reported having a disability.

Comparison with Other States

The percent of people in the 50 states and District of Columbia reporting being diagnosed with arthritis ranged from 18.8% to 40.1%. The median of all states was 26.3% percent. Iowa was slightly better than the median at 25.4%.

Figure 16.2: Percent of Iowans Diagnosed with Arthritis by Year 2011-2018

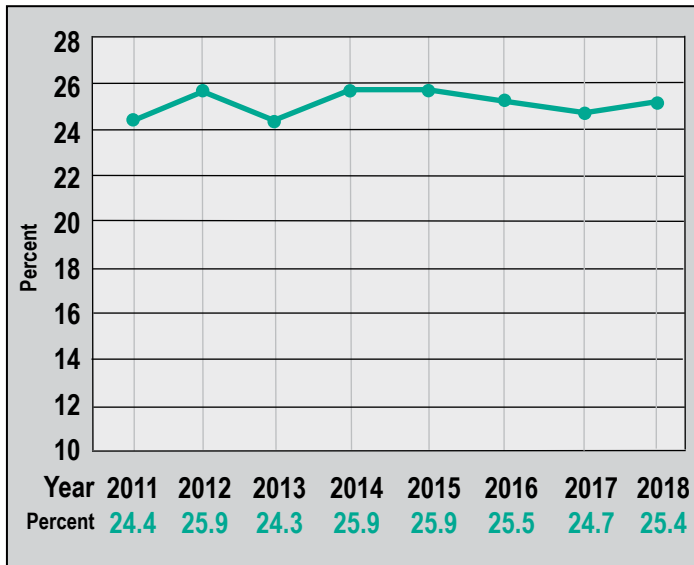
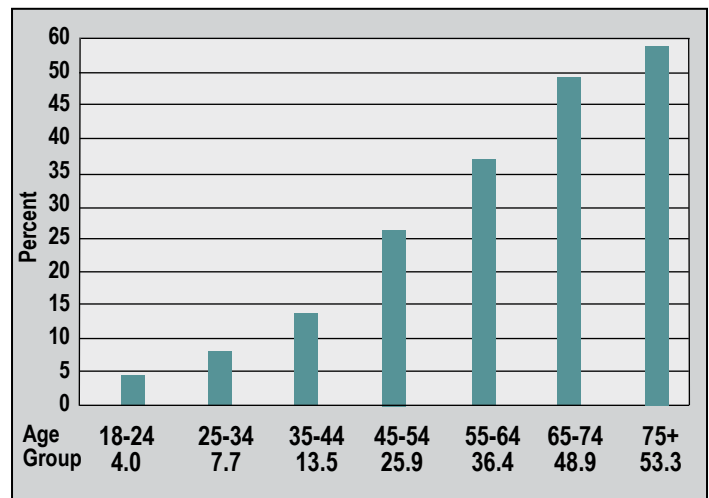


Figure 16.3: Percent of Iowans with Arthritis by Age, 2018



References

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FACT

Over half of adult Iowans 75 years and older reported some form of arthritis in 2018.

Background

The 2018 BRFSS examines three areas related to injury control: falls, seat belt use and drinking and driving.

Falls

Unintentional falls are the leading cause of both fatal and nonfatal serious injuries among the fastest growing segment of the U.S. population, older adults. In 2018, there were 52 million older adults in the United States, and there were a total of 36 million falls reported in that population (Centers for Disease Control and Prevention, 2020). In the United States, one of every four people age 65 years and older falls each year (Centers for Disease Control and Prevention, 2017). Injuries resulting from falls include broken bones and head injuries. Falls are the leading cause of traumatic brain injury (TBI), and at least 95.0% of hip fractures are a result of falling (Centers for Disease Control and Prevention, 2017). Furthermore, falling can prompt a fear of future falls. This fear can become a barrier for the proper level of activity throughout the day, which can make a person weaker and unintentionally increase the chances of falling (Centers for Disease Control and Prevention, 2017). In 2015, the direct medical costs of falls were \$50 billion, with Medicare and Medicaid supporting three-quarters of this cost (Centers for Disease Control and Prevention, 2017).

Using data from 2016, Burns and Kakara (2018) found that older men experienced a higher rate of fatal falls, while older women experienced a higher rate of non-fatal falls. This difference was likely due to the circumstances of the fall, which left men with more serious injuries as a result of their fall(s) than women (Burns & Kakara, 2018). Data from the 2018 national BRFSS indicated that women reported a higher rate of having at least one fall. Each year, 2.8 million older people are treated in emergency departments for fall injuries (Centers for Disease Control and Prevention, 2017). A recent study found that one-third of fall victims were greater than 80 years old, almost half of victims did not seek medical attention (no emergency department visit or hospitalization), one-third had an emergency department visit only, and one-fifth were hospitalized (Choi, Choi, DiNitto, Marti, & Kunik, 2019). Those who were hospitalized spent an average of 11.2 nights in hospitals, and included the largest population of 80+ year olds, of whom had the highest prevalence of previous stroke as well as limitations in activities of daily living (ADLs) and mobility. Furthermore, those who

sustained a fall while away from home were more likely to only seek emergency department care, while those who sustained a fall from inside their home were more likely to be hospitalized as a result of their fall (Choi et al., 2019). From the years 2007 to 2016, the rate of deaths caused by falls in the United States rose by 30.0%; consequently, if we continue to see a rise, experts predict that there will be seven deaths related to falling each hour by the year 2030 (Centers for Disease Control and Prevention, 2017).

Having a history of falls increases the chances for future fall(s) by two to six times (Moncada & Mire, 2017). A fall is often a marker of increasing fragility, functional decline, or neurological impairment, and may indicate the need for a secondary prevention strategy (e.g., hip protectors to prevent hip fractures.)

Falls Results

The BRFSS defines a fall as when a person unintentionally comes to rest on the ground or another lower level. Respondents age 45 years and older were asked how many times they had experienced a fall in the last 12 months. In this group, 24.1% reported they had fallen at least once. There were 2.7% of Iowans who reported falling five or more times. Of those who had fallen, 32.4% said that at least one fall had caused injury to them. The prevalence rate of adult Iowans who had been injured five or more times from falling was 2.5%. In the BRFSS, injury was defined as limiting activity for at least a day or causing them to see a doctor.

Consistent with previous years of Iowa BRFSS data, household income had more of a relationship to whether people experienced a fall than any other demographic characteristic. The group reporting the highest prevalence of falls was those with an annual household income of less than \$15,000 (37.5%), while the group with the lowest prevalence was those with annual household incomes of \$75,000 and above (20.0%; see Table 17.1). Of those aged 75 years and older, 29.5% experienced at least one fall in the past 12 months, which was a higher percentage than what was reported in the younger age groups.

FACT

Those with lower incomes experience falls at a higher rate than those with higher incomes.

Table 17.1: Prevalence of Falls in Iowa, 2018

Demographic Groups	Any Falls in Last 12 Months	
	%	C.I. (95%)
Total	29.6	(22.9-25.3)
Sex		
Male	24.3	(22.5-26.0)
Female	24.0	(22.4-25.7)
Race/Ethnicity		
White/Non-Hisp.	24.0	(22.8-25.2)
Non-White or Hisp.	25.6	(19.9-31.4)
Age		
45-54	22.3	(19.8-24.8)
55-64	23.9	(21.8-26.0)
65-74	23.7	(21.5-25.9)
75+	29.5	(26.5-32.6)
Education		
Less than H.S.	24.6	(19.2-30.1)
H.S. or G.E.D.	23.6	(21.6-25.6)
Some Post-H.S.	25.2	(23.0-27.5)
College Graduate	23.4	(21.4-25.4)
Household Income		
Less than \$15,000	37.5	(31.2-43.8)
\$15,000- 24,999	29.1	(25.4-32.7)
\$25,000- 34,999	27.0	(22.7-31.4)
\$35,000- 49,999	24.0	(20.9-27.2)
\$50,000- 74,999	22.4	(19.6-25.3)
\$75,000+	20.0	(18.1-22.0)



Seat Belt Use

In addition to being the leading cause of death among U.S. residents aged 5-34 years, motor vehicle-occupant injuries account for approximately 15.0% of all nonfatal injuries treated in U.S. emergency departments. In 2018, there were 36,560 people killed on U.S. roadways in motor vehicle crashes, and 62.0% of those (22,697) were occupants of passenger vehicles (National Center for Statistics & Analysis, 2020). There were approximately 4.5 million people who were seriously injured in motor vehicle accidents in 2018, and over 2.2 million emergency department visits resulted from nonfatal motor vehicle crash injuries. An estimated lifetime medical and work cost of \$62 billion was calculated in 2017 from nonfatal crash injuries in the United States (Centers for Disease Prevention and Control, 2020).

Seat belts save lives. Seat belts, which reduce the risk for fatal injuries from motor vehicle crashes by approximately 45.0% and reduce serious injuries by half are the most effective intervention for protecting motor vehicle occupants (Centers for Disease Control and Prevention, 2020).

Failure to wear a seat belt contributes to more fatalities than any other single traffic safety-related behavior. In 2018, 47.0% of the 22,697 passenger vehicle occupants killed in accidents were not wearing seat belts. Unbelted occupants were five times more likely to die when involved in a crash than belted occupants. Wearing a seat belt is still the single most effective thing we can do to save lives and reduce injuries on America's roadways. The National Highway Traffic Safety Administration (NHTSA) estimated that in 2017, the use of seat belts in passenger vehicles saved 14,995 lives for occupants five years of age and older (National Center for Statistics & Analysis, 2020).

Apart from this, seat belt use would lead to a substantial saving in hospital costs and disability, particularly from head trauma.

FACT

**Seat belts reduce the risk for fatal injuries from motor vehicle crashes by 45.0%.
Seat belts save lives.**

Seat Belt Use Results

In 2018, when respondents were asked how often they wore a seat belt when driving or riding in a car, 93.7% reported always or nearly always. Wearing seat belts was more common among females than males (97.1% vs. 92.7%). It also seemed to be less prevalent among those with less education (see Table 17.2).

Drinking and Driving

An automobile crash is considered to be alcohol-related when the driver is reported to have a blood alcohol level (BAC) of .08 grams per deciliter or higher. Considering that the blood alcohol level may not be reported for every crash and that any amount of alcohol causes some amount of impairment, figures for its impact are conservative.

Even though the number of fatalities from drunk driving has fallen since 1982 and by about a third over the past three decades, about three out of ten American auto crash deaths involve alcohol (29.0%; National Center for Statistics & Analysis, 2019). Every day, 30 people in the United States die in an alcohol-related vehicle crash – that’s one person every 50 minutes (National Highway Traffic Safety Administration, 2020). About one-third of these deaths involved someone other than the driver. Even a small amount of alcohol can be detrimental to the driver’s ability to maintain focus and control. For example, in 2018, there were almost 1,900 Americans killed in alcohol-related crashes where the driver had a BAC of 0.01-0.07, below the legal limit (National Highway Traffic Safety Administration, 2020). Alcohol-related crashes in the United States cost the public an estimated \$52 billion, according to cost data from 2010 (National Highway Traffic Safety Administration, 2020).

Drunk driving affects more than just the driver under the influence. In 2018, 22.0% of children aged 14 and younger who were killed in motor vehicle crashes perished in alcohol-related crashes, and over half of the time, it was because of the child’s own driver being drunk at the wheel (National Highway Traffic Safety Administration, 2020).

FACT

One person dies every 50 minutes in an alcohol-related vehicle crash.

Table 17.2: Prevalence of Risks for Motor Vehicle Related Injury in Iowa, 2018

Demographic Groups	Always or Nearly Always Wear Seatbelts		Drink and Drive	
	%	C.I. (95%)	%	C.I. (95%)
Total	93.7	(93.1-94.4)	5.2	(4.5-5.9)
Sex				
Male	91.0	(90.0-92.0)	7.0	(6.0-8.1)
Female	96.3	(95.5-97.2)	2.8	(2.0-3.6)
Race/Ethnicity				
White/Non-Hisp.	94.0	(93.3-94.7)	5.3	(4.6-6.1)
Black/Non-Hisp.	90.0	(84.6-95.4)	6.4	(0.0-13.0)
Other/Non-Hisp.	89.6	(84.8-94.3)	5.7	(1.1-10.4)
Hispanic	94.8	(92.4-97.3)	0.5	(0.0-1.6)
Age				
18-24	88.7	(85.5-91.9)	6.7	(4.0-9.5)
25-34	94.2	(92.7-95.7)	6.2	(4.2-8.1)
35-44	93.7	(92.2-95.2)	6.0	(4.2-7.8)
45-54	95.6	(94.4-96.8)	5.9	(4.3-7.5)
55-64	94.9	(93.8-96.1)	4.5	(3.1-5.9)
65-74	93.4	(92.0-94.9)	2.7	(1.6-3.9)
75+	95.5	(94.1-96.9)	1.3	(0.2-2.5)
Education				
Less than H.S.	87.3	(82.9-91.7)	3.1	(0.4-5.8)
H.S. or G.E.D.	91.7	(90.5-93.0)	5.8	(4.3-7.2)
Some Post-H.S.	94.7	(93.7-95.6)	5.1	(3.9-6.3)
College Graduate	96.9	(96.2-97.5)	5.1	(4.0-6.2)
Household Income				
Less than \$15,000	91.4	(88.6-94.2)	4.4	(1.1-7.7)
\$15,000- 24,999	92.8	(91.0-94.6)	3.8	(1.8-5.9)
\$25,000- 34,999	91.7	(87.9-95.6)	4.9	(2.3-7.6)
\$35,000- 49,999	93.7	(92.0-95.4)	7.0	(4.6-9.3)
\$50,000- 74,999	94.5	(93.2-95.8)	4.9	(3.3-6.5)
\$75,000+	95.0	(94.1-95.9)	5.6	(4.5-6.7)



Drinking and Driving Results

In 2018, 5.2% percent of adult lowans reported that within the past 30 days they had driven when they had too much to drink at least once. More men than women had reported doing this (8.7% vs. 3.4%; see Table 17.2). A greater percentage of younger people reported driving under the influence. The range was 1.3% for those age 75 years and older to 6.7% for people age 18-24 years old. The prevalence varied widely but not in any particular pattern for people from different household income groups. The lowest prevalence rate was 0.5% among Hispanic lowans and the highest was among adult lowans who were male and who had a household income of \$35,000-\$49,999 per year (both at 7.0%).

Comparison with Other States

In all 50 states and the District of Columbia the range of people reporting at least one fall in the last year ranged from 23.9% to 39% with a median of 29.6 percent. Iowa had the same percentage as the median.

In terms of seat belt use, the percent reporting their use as always or nearly always ranged from 82.8% to 97.4% with a median of 93.7%, which was also the rate for Iowa.

Drinking and driving at least once in the past month ranged from 1.7% to 5.2% in 2018. Iowa had the highest prevalence rate out of all 50 states and the District of Columbia regarding driving under the influence with a rate of 5.2%. The median was 3.1% for the country.

FACT

Iowa had the highest rate of drinking and driving across the country, with nearly 69,631 adult lowans reported drinking and driving at least once.

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Immunizations

Background

Influenza, or the flu, is a contagious respiratory illness caused by viruses that infect the nose, throat, and lungs. It can cause mild to severe illness, and at times can lead to death. The best way to prevent the flu is by getting a flu vaccination each year (Centers for Disease Control and Prevention, 2020).

Influenza can vary greatly from year to year in the severity of its impact. For instance, the seasonal influenza primarily causes more of a problem for the elderly, while the 2009 H1N1 pandemic affected more children, young, and middle-aged adults (Centers for Disease Control and Prevention, 2019). For healthy children and adults, influenza is typically a moderately severe illness. For unhealthy or elderly people, influenza can be very dangerous. Adults 65 years old and older who contract influenza are much more likely to have serious complications from this illness, which can affect their health and independence.

Influenza can be prevented with the influenza vaccine. This vaccine is produced each year so that it can be effective against influenza viruses that are expected to cause illness that year. A yearly influenza vaccination has been reported to lower the chances of individuals needing to go to the doctor for the flu by 40.0% to 60.0%. The vaccine may be taken through several methods, but the most common is a shot in the upper arm muscle. The best time to receive the influenza vaccine is soon after the vaccine becomes available in the fall of each year. The Centers for Disease Control and Prevention (2020) recommends that people get vaccinated by the end of October of each year, but one can continue receiving the vaccine into January or later of the following year. The recommendation by the Centers for Disease Control and Prevention is for everyone in the U.S. from six months of age and older to get the seasonal influenza vaccine. There are different vaccine options, and one should consult a doctor or healthcare professional for the most appropriate one based on health status and age (Centers for Disease Control and Prevention, 2020).

Influenza is a very serious illness for anyone at high risk. Certain diseases that place people at high risk include:

- Chronic lung disease such as asthma, emphysema, chronic bronchitis, tuberculosis, or cystic fibrosis,
- Heart disease,
- Diabetes or other chronic metabolic disorders,
- Severe anemia,
- Chronic kidney disease or
- Diseases or treatments that depress immunity.

Some of the symptoms associated with influenza are fever, chills, coughing, weakness, muscle aches and pains, sore throat or headache (Centers for Disease Control and Prevention, 2020).

Pneumonia is a lung disease caused by bacteria, viruses, and other infectious agents such as fungi. Pneumonia is frequently a complication of influenza. In 2017, three million people in the United States were diagnosed with pneumonia in an emergency department, and around 50,000 people died from the disease (Centers for Disease Control and Prevention, 2020). In 2018, influenza and pneumonia combined were the eighth leading cause of death among all Americans as well as those specifically aged 65 and older (Centers for Disease Control and Prevention, 2020). Influenza and pneumonia together resulted in 578 deaths in Iowa in 2017 (Centers for Disease Control and Prevention, 2018).

The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) recommends that persons aged 65 years old or older receive the pneumococcal polysaccharide vaccine at least once in their lifetime. A second vaccine (pneumococcal conjugate vaccine, typically first administered when children are younger than 2 years of age) is now also recommended to follow the first for added protection, but people should consult with their doctor or healthcare provider for which combination is best based on age, previous vaccinations, and health status (Centers for Disease Control and Prevention, 2019). People at an increased risk for pneumococcal disease are those with chronic illnesses, such as diseases of the heart, liver, kidney, or lung as well as diabetes and alcoholism, those with conditions that result in weakened immune system, such as HIV/AIDS and cancer, those with cochlear implants or cerebrospinal fluid leaks and those who engage in cigarette smoking (Centers for Disease Control and Prevention, 2017).

Immunizations *continued*

Immunization Results

In 2018, 59.7% of Iowans age 65 and over reported having a flu shot in the past 12 months. This is the lowest level seen over the past 7 years (see Figure 18.1).

Among all adults, 40.6% had a flu immunization in the past 12 months. Females, older people, people with more education and people with higher household incomes reported higher prevalence rates of having a flu immunization in the past year. The lowest percentage was found among 18-24 year olds (26.3%), while the highest was for those age 75 and older (64.7%; see Table 18.1).

In 2018, 76.3% of Iowans age 65 and over reported ever having a pneumonia vaccination. This is lower than the figure found in 2017 (80.3%), but the same as what was reported in 2016 (see Figure 18.1).

Among all adults, 35.1% had ever received a pneumonia vaccination. Older people reported the highest rates of having a vaccination in their lifetime (82.1% for 75+ year olds; see Table 18.1). More females than males had ever received a pneumonia vaccination.

Figure 18.1: Flu & Pneumonia Immunizations by Year, 2011-2018, Age >= 65

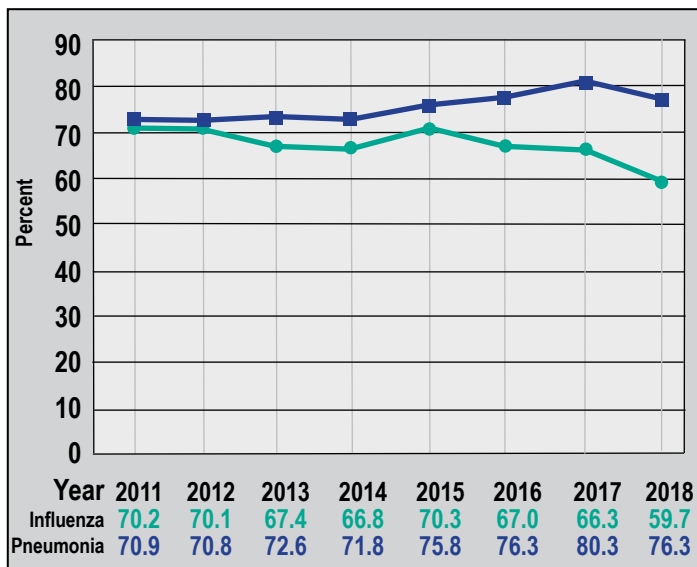


Table 18.1: Percentage of Influenza and Pneumonia Immunizations in Adult Iowans, 2018

Demographic Groups	Influenza		Pneumonia	
	%	C.I. (95%)	%	C.I. (95%)
Total	40.6	(39.4-41.8)	35.1	(33.9-36.2)
Sex				
Male	35.7	(34.1-37.3)	31.3	(29.7-32.9)
Female	45.4	(43.7-47.1)	38.5	(36.8-40.1)
Race/Ethnicity				
White/Non-Hisp.	41.1	(39.9-42.4)	36.4	(35.2-37.6)
Black/Non-Hisp.	33.7	(24.8-42.6)	31.2	(22.1-40.3)
Other/Non-Hisp.	42.6	(35.5-49.7)	32.3	(25.4-39.1)
Hispanic	34.6	(29.5-39.8)	15.0	(11.1-19.0)
Age Group				
18-24	26.3	(22.5-30.0)	30.3	(25.6-35.0)
25-34	31.1	(27.9-34.2)	13.9	(11.3-16.5)
35-44	35.1	(32.2-38.0)	14.5	(12.2-16.8)
45-54	35.7	(32.9-38.5)	19.2	(16.8-21.6)
55-64	45.5	(43.0-48.0)	30.6	(28.2-32.9)
65-74	56.0	(53.3-58.6)	71.8	(69.4-74.3)
75+	64.7	(61.6-67.9)	82.1	(79.5-84.7)
Education				
Less than H.S.	37.4	(32.4-42.4)	36.9	(31.7-42.1)
H.S. or G.E.D.	36.6	(34.6-38.7)	38.4	(36.3-40.4)
Some Post-H.S.	37.8	(35.8-39.9)	35.0	(32.9-37.1)
College Graduate	50.2	(48.2-52.2)	30.6	(28.8-32.5)
Household Income				
Less than \$15,000	38.3	(33.3-43.3)	45.5	(40.2-50.8)
\$15,000- 24,999	41.8	(38.4-45.2)	46.1	(42.5-49.6)
\$25,000- 34,999	38.0	(33.8-42.2)	40.3	(35.9-44.6)
\$35,000- 49,999	38.3	(35.1-41.5)	35.7	(32.6-38.8)
\$50,000- 74,999	40.7	(37.8-43.5)	32.4	(29.6-35.1)
\$75,000+	42.3	(40.3-44.4)	25.7	(23.9-27.6)



Immunizations *continued*

For the flu, more adult Iowans who had higher levels of education had received a vaccination. On the other hand, more adult Iowans who had lower levels of education had received a pneumonia vaccination. This trend was also observed within the income categories. For example, just over one-quarter (25.7%) of people with a household income of \$75,000 or more had ever received the pneumonia vaccine, while 45.5% of those with a household income of less than \$15,000 had received the vaccine before. The relation with education and income is the opposite of most health risk measures, though is a similar trend as what was observed in the 2016 Iowa BRFSS data. The lowest percentage of pneumonia vaccination occurred among those who were 25 to 34 years old (13.9%), while those 75 years old and above reported the highest rates at 82.1%. The prevalence rate of ever having a pneumonia vaccination did not statistically increase until age 55, and it dramatically increased from age 65. Since vaccination is only recommended for those age 65 years and older except under special conditions (those of younger ages who are at high risk for pneumonia), this finding is consistent with current vaccination recommendations.

In 2018, results were mixed regarding the relationship between chronic conditions that could increase the risk of getting the flu or pneumonia and receiving the respective vaccinations. Of all respondents ever told they had diabetes, asthma, COPD, or kidney disease; 48.2% had a flu vaccination in the past 12 months, compared to 52.8% who had a chronic condition and had not received a flu vaccination, though the rates were not statistically different from one another. Of respondents ever told that they had one or more of the chronic health conditions above, a higher percentage had received a pneumonia vaccine in their lifetime (55.7%) than those with at least one chronic condition without a history of a pneumonia vaccine (44.3%). This difference was significant, resulting in a higher percentage of people with chronic condition(s) receiving the pneumonia vaccine, which is in line with what the Centers for Disease Control and Prevention recommends, in terms of people most at risk for pneumonia.

FACT

Significant improvements are necessary for Iowans to meet the Healthy People 2020 and Healthy Iowans goals for flu and pneumonia vaccination rates by 2020.

Comparison with Other States

The median percentage of the population age 65 and over who have had a flu shot in the past 12 months from all the states and the District of Columbia was 55.3% in 2018. The range was from 44.8% to 65.6%. The prevalence in Iowa was 59.7%, which was higher than the median.

The median percentage of the population age 65 years old and older who ever had a pneumonia vaccination was 73.4%. The range was from 64% to 78.6%. Iowa's rate for adults 65 years of age or older (76.3%) was above the median.

Health Objectives for Iowa and the Nation

The Healthy People 2020 and Healthy Iowans goals for having a flu shot in the past 12 months and ever having a pneumonia vaccination for people age 65 and over are both 90.0%. Although much higher than the nation as a whole, Iowa's 2018 rates of 59.7% percent for having a flu vaccination and 76.3% for ever having a pneumonia vaccination are a long way from meeting these targets. The Healthy People 2020 goal for flu immunization of people age 18 to 64 is 80.0%. Iowa misses this by an even greater amount having a flu immunization prevalence rate of only 35.1% percent. This is trending in the opposite direction of the goal, as the rate was 41.1% in 2016.

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Background

HIV stands for human immunodeficiency virus. This is the virus that causes acquired immunodeficiency syndrome (AIDS). HIV is different from most other viruses because it attacks the immune system. The immune system gives our bodies the ability to fight infections. HIV finds and destroys a type of white blood cell that the immune system must have to fight disease. AIDS is the final stage of HIV infection. It can take years for a person infected with HIV, even without treatment, to reach this stage. Having AIDS means that the virus has weakened the immune system to the point at which the body has a difficult time fighting infections (Centers for Disease Control and Prevention, 2020).

June 2018 marks 37 years since the HIV/AIDS epidemic, which was prompted by two cases of a rare form of pneumonia, first reported in the United States and later found to be HIV/AIDS (Centers for Disease Control and Prevention, 2011). Approximately 38 million individuals were living with HIV infection worldwide in 2019. About 1.2 million people in the United States were living with HIV at the end of 2018 (U.S. Department of Health and Human Services, 2020). About one in seven (14%) people are living with HIV but do not know they are infected. Not knowing puts them and others at risk.

In 2018, an estimated 39,968 people were diagnosed with HIV infection in the United States. The number of new HIV diagnoses has decreased about 26% from 2005 to 2018. Because HIV testing has remained stable or increased in recent years, this decrease in new diagnoses suggests a positive response and true decline in new infections. The decrease may be due to targeted HIV prevention efforts. This being said, progress has been experienced unevenly, and diagnoses have increased among a few groups (Centers for Disease Control and Prevention, 2020; U.S. Department of Health and Human Services, 2020). Data suggests that HIV prevention and treatment are not sufficiently reaching the populations that could most benefit from them.

Groups with the largest exposure include “men who have sex with men (MSM)”, African Americans, Hispanics, transgender persons, injection drug users and those who reside in the South. Data must be utilized to ensure targeted prevention efforts to reach those in greatest need, with a primary focus on young African Americans,

Hispanics, transgender persons, injection drug users and those who reside in southern states. (U.S. Department of Health and Human Services, 2020).

African American and Hispanic men continue to be over-represented among persons with HIV diagnoses when compared to the sizes of their populations in Iowa. For example, even though Non-Hispanic Blacks represent 3.0% of Iowa's population, they experienced 28.0% of the diagnoses in 2018; Hispanics represent 6.0% of the state's population, but experienced a 12.0% rate of HIV diagnoses in 2018 (Iowa Department of Public Health, 2019). However, it is important to keep in mind that Non-Hispanic Whites accounted for 55.0% of new HIV diagnoses and 60% of persons living with HIV/AIDS (Iowa Department of Public Health, 2019).

The highest prevalence rate ever recorded was in 2016 when 136 new Iowans were diagnosed with HIV/AIDS. Since 2016, there continues to be a decrease in HIV/AIDS prevalence in Iowa. As of December 31, 2018, there were 2,872 persons living with HIV or AIDS who were Iowa residents at the time of their diagnosis. There were 116 new diagnoses during 2018, which is a lower number of new diagnoses than in 2017 (125) and in 2016 (136; Iowa Department of Public Health, 2019).

The lifetime costs of health care associated with HIV have grown considerably. Currently, the lifetime treatment cost of a single HIV infection is estimated at \$379,668 in 2010 dollars (Centers for Disease Control and Prevention, 2019).

The CDC recommends routine HIV testing in health care settings. People should get tested so they can receive treatment and not infect others. By being tested, people can become aware of their status and if diagnosed, can start receiving treatment and still remain healthy for many years down the road. If it is a negative diagnosis, individuals can further make decisions regarding sex, the use of drugs, and health care regarding protection from getting HIV (Centers for Disease Control and Prevention, 2020). Treatment for HIV is better than ever before.

The U.S. Department of Health and Human Services (HHS) has set the goal to reach 75.0% reduction in new HIV infections by 2025 and 90.0% reduction by 2030 as a result of their launch of “Ending the HIV Epidemic: A Plan for America”. This initiative that was released in 2019 focuses specifically on areas where HIV transmission has occurred most frequently. Currently, neither Iowa nor its counties have been listed as hot spot areas, according to HHS (U.S. Department of Health and Human Services, 2020). This plan incorporates the strategies of diagnosis, treatment, prevention, and response.

HIV/AIDS Results

In 2018, 26.2% of all adult Iowans reported ever being tested for HIV, not including part of a blood donation. This is the lowest rate since 2014, when just under one-quarter of adult Iowans reported ever being tested for HIV (24.7%; see Figure 19.1).

Females, those of minority race/ethnicity, adults between 25 and 54 years of age, and those with lower household incomes reported having been tested at higher rates. The largest proportion of respondents tested was among Non-Hispanic Blacks (55.8%). The smallest proportion reporting ever being tested were those age 75 years and older (5.5%; see Table 19.1).

Figure 19.1: Iowans having HIV test by year – 2011-2018

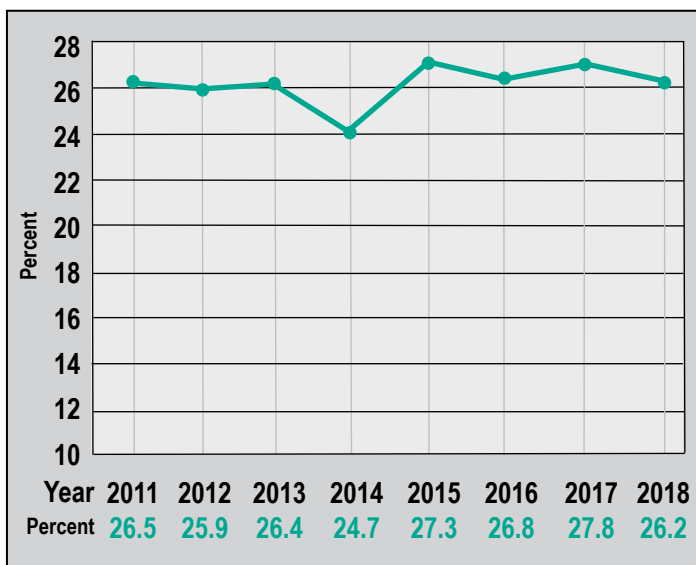


Table 19.1: Percentage of Iowans Tested for HIV/AIDS, 2018

Demographic Groups	Had HIV Test	
	%	C.I. (95%)
Total	26.2	(25.1-27.3)
Sex		
Male	24.3	(22.8-25.9)
Female	28.0	(26.4-29.6)
Race/Ethnicity		
Non-Hispanic White	24.2	(23.0-25.3)
Non-Hispanic Black	55.8	(46.2-65.5)
Non-Hispanic Other	35.9	(28.9-42.8)
Hispanic	37.9	(32.5-43.3)
Age Group		
18-24	21.6	(17.9-25.3)
25-34	39.3	(35.9-42.7)
35-44	45.1	(42.0-48.2)
45-54	30.5	(27.7-33.3)
55-64	18.8	(16.8-20.8)
65-74	12.3	(10.4-14.1)
75+	5.5	(4.0-7.0)
Education		
Less than H.S.	27.1	(22.3-32.0)
H.S. or G.E.D.	21.3	(19.4-23.1)
Some Post-H.S.	27.4	(25.4-29.4)
College Graduate	29.9	(28.0-31.8)
Household Income		
<\$15,000	37.3	(32.0-42.6)
\$15,000- 24,999	30.3	(26.9-33.6)
\$25,000- 34,999	28.6	(24.4-32.8)
\$35,000- 49,999	25.8	(22.7-28.9)
\$50,000- 74,999	25.4	(22.7-28.1)
\$75,000+	25.6	(23.7-27.5)



Figure 19.2 shows that in younger people, many more women report ever being tested, but for adults age 55 and older, testing rates for males surpass those of females, specifically in the 55-64 age group and those aged 75 and up.

Comparison with Other States

In all 50 states and the District of Columbia the percentage of people who had a test for HIV ranged from 22.5% to 72.3%. The median percentage of people tested was 37.8%. Utah (22.5%) and Nebraska (25.2%) were the only two states with a lower percentage than Iowa's rate of 26.2%.

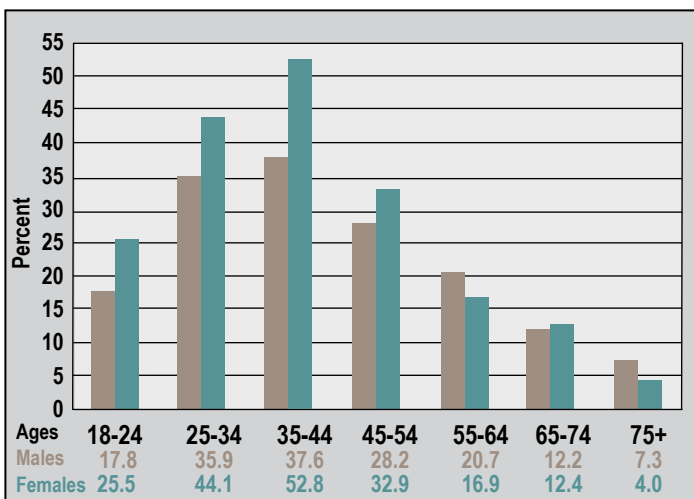
Health Objectives for the Nation

Healthy People 2020 has the goal of 16.9% of people age 15 to 44 being tested for HIV in the past 12 months. Iowa had a rate of 9.9% for respondents age 18 to 44 tested within this time period, which is much below the goal.

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Figure 19.2: Percentage of Iowans Reporting Ever Being Tested for HIV by Age and Gender, 2018



FACT

Iowans had the 3rd lowest rate of being tested for HIV/AIDS across the 50 states and the District of Columbia.

Background

Good overall health requires good oral health. Oral health complications not only reflect general health conditions, but also exacerbate them. Oral diseases are linked to poor pregnancy outcomes, cardiovascular disease, diabetes, and respiratory disease. Poor oral health results in chronic and acute pain, loss of days from work and school, and inappropriate use of emergency rooms. Untreated oral diseases and conditions can impact the ability to eat and drink, swallow, maintain proper nutrition, smile, and communicate (U.S. Department of Health and Human Services, 2000).

There are threats to oral health across the lifespan. Tooth decay (cavities) affects adults, with 90% of those over the age of 20 having some degree of tooth-root decay (Centers for Disease Control and Prevention, 2020). More than 1 in 4 adults aged 20-64 suffer from untreated tooth decay (Centers for Disease Control and Prevention, 2020). Almost half of all adults who are 30 years of age or older show signs of gum disease, with 9.0% of adults suffering from severe gum disease (Centers for Disease Control and Prevention, 2020). In addition, 2 in 5 adults in the U.S. have reported feeling pain in their mouth within the past year (Centers for Disease Control and Prevention, 2020). Those who are older (especially those older than 55 years of age), use tobacco, drink alcohol excessively and/or have poor dietary habits are at a higher risk for oral and pharyngeal cancers (Centers for Disease Control and Prevention, 2020; U.S. Department of Health and Human Services, 2000).

The baby boomer generation will be the first where the majority will maintain their natural teeth over their entire lifetime, having benefited from water fluoridation and fluoride toothpastes. There has been a decrease in total natural tooth loss among those aged 65 and older from 27.0% between 1999 and 2004 to 17.0% between 2011 and 2016. Still, 1 out of 6 adults in this age group have lost all of their teeth (Centers for Disease Control and Prevention, 2021).

Toothaches are the most common pain of the mouth or face reported by adults. This pain can interfere with vital functions such as eating, swallowing and talking. Almost 2 out of 5 adults reported some form of facial pain in the past year (Centers for Disease Control and Prevention, 2020). Almost half of adults show signs of gum disease, and severe

gum disease affects about 9.0% of adults (Centers for Disease Control and Prevention, 2020). Infections and inflammation in the gums and bone that surround and support the teeth can result in gingivitis in its earlier stages or periodontitis in its more serious form. About half of adults in the U.S. who are aged 30 and older have some form of periodontal (gum) disease (gingivitis or periodontitis; 46.0%; Centers for Disease Control and Prevention, 2013). The risk for these diseases increases with age, such that over 70.0% of those 65 years and older suffer from periodontal disease.

Profound disparities remain that affect those without the resources to achieve good oral care or the knowledge of its importance. Untreated tooth decay is experienced at three times the rate for 35-44 year olds who hold less than a high school education than those who have at least some college education. Additionally, adults in the same age group who have less than a high school degree suffer from destructive gum disease at three times the rate as adults who have at least some college education (Centers for Disease Control and Prevention, 2020). Poor adults aged 18 and older have a higher percentage of untreated tooth decay than non-poor adults (34.4% vs. 11.3%). This fact inspired the first Surgeon General's Report on Oral Health, which identified a "silent epidemic" of dental and oral diseases and called for a national effort to improve Americans' oral health (U. S. Department of Health and Human Services, 2000).

Many studies document that those in poverty, racial minorities and those in rural areas have less access to dental care. For example, poor children are more likely to have unmet dental need than children from families with higher incomes. The most common barriers to good oral health are a lack of dental insurance or the inability to pay for care and problems of access involving transportation and travel, as well as the need to take time off work for appointments (U. S. Department of Health and Human Services, 2000).

FACT

Disparities in income, education, race/ethnicity, and location greatly impact access to dental care and oral health.

Oral Health *continued*

Increasing access to preventive care is an important way to improve oral health for all populations, but in particular for the vulnerable and underserved. Many oral diseases can be prevented through a combination of behavior changes (e.g. home care and hygiene, proper food choices and tobacco cessation) and system changes (e.g. community water fluoridation, oral health promotion and awareness increasing accessibility to care and increasing the dental safety net).

Oral Health Results

In 2018, 70.8% of Iowans surveyed reported visiting a dentist, dental hygienist or dental clinic within the past year. Females, people with higher education and greater income reported higher rates of visiting a dentist over the past 12 months. Adult Iowans who held a college degree and those with a household income of \$75,000 or more had the highest proportions reporting a past year dental visit (83.5% and 83.3%, respectively). On the other hand, just over half of those who had less than a high school education had visited the dentist in the last year (50.7%; see Table 20.1).

A majority of adult respondents (62.1%) had no permanent teeth removed due to tooth decay or gum disease. Females reported having had no permanent teeth removed (62.1%) at a higher rate than males (37.8%). The percentage of those with permanent teeth removed rose with increasing age, lower income, and lower education. The percentage with no permanent teeth removed was highest for those age 18 to 24 years old (91.5%). The lowest percent having all their own teeth was 75 years and older (30.0%; see Table 20.1). The percent of Iowans aged 65 and older having all of their permanent teeth removed was 11.6%, which is lower than the number reported in 2016 when 14.9% of older adult Iowans had all of their permanent teeth removed.

FACT

7 out of 10 adult Iowans had visited a dentist, dental hygienist or dental clinic in the past year.

Table 20.1: Percentage of Iowans Having Dental Care, 2018

Demographic Groups	Last Dental Visit Within 12 Months		No Permanent Teeth Removed	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	70.8	(69.7-71.9)	62.1	(61.0-63.3)
Sex				
Male	66.9	(65.3-68.5)	37.8	(36.2-39.4)
Female	74.5	(73.0-76.1)	62.1	(60.4-63.7)
Race/Ethnicity				
White/Non-Hisp.	71.8	(70.7-73.0)	62.4	(61.2-63.6)
Black/Non-Hisp.	62.3	(53.8-70.9)	60.2	(51.6-68.7)
Other/Non-Hisp.	58.2	(51.3-65.1)	61.4	(54.7-68.1)
Hispanic	67.6	(62.6-72.5)	60.4	(55.2-65.6)
Age Group				
18-24	68.5	(64.4-72.5)	91.5	(88.7-94.3)
25-34	66.8	(63.7-69.9)	77.4	(74.5-80.2)
35-44	74.3	(71.7-76.9)	70.8	(68.0-73.5)
45-54	71.5	(68.8-74.1)	61.3	(58.5-64.1)
55-64	73.4	(71.2-75.6)	51.1	(48.6-53.6)
65-74	71.9	(69.5-74.3)	39.0	(36.5-41.6)
75+	67.0	(63.8-70.2)	30.0	(26.9-33.0)
Education				
Less than H.S.	50.7	(45.4-55.9)	43.1	(37.9-48.3)
H.S. or G.E.D.	64.0	(62.0-66.0)	52.7	(50.7-54.8)
Some Post-H.S.	72.3	(70.4-74.2)	64.7	(62.8-66.7)
College Graduate	83.5	(82.0-85.0)	76.3	(74.6-77.9)
Household Income				
Less than \$15,000	55.2	(50.1-60.3)	49.2	(44.1-54.3)
\$15,000- 24,999	54.6	(51.2-58.1)	46.9	(43.4-50.4)
\$25,000- 34,999	61.4	(57.0-65.8)	50.8	(46.4-55.3)
\$35,000- 49,999	66.6	(63.4-69.7)	55.8	(52.6-59.1)
\$50,000- 74,999	74.7	(72.2-77.2)	64.0	(61.2-66.8)
\$75,000+	83.3	(81.7-84.9)	75.0	(73.3-76.7)



Health Objectives for Iowa and the Nation

Healthy People 2020 set a goal of 31.2% of Americans aged 45 to 64 years having no permanent teeth extracted. Iowa continues to meet and exceed this goal, with 55.8% having no extractions in this age group.

In Healthy People 2020, the goal was 21.6% of people aged 65 to 74 years having all permanent teeth extracted. Iowa also continues to meet and exceed this goal having only 10.4% with all permanent teeth extracted.

References

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FACT

Over 1 in 10 adults aged 65 years or older reported having had all of their permanent teeth removed.



Mental Health and Adverse Childhood Experiences (ACEs)

Background

Mental health and mental illness are two different things. Mental health includes our emotional, psychological and social well-being. It affects how we think, feel and act. It also helps determine how we handle stress, relate to others and make healthy choices (Centers for Disease Control and Prevention, 2018). Mental illness refers to conditions that affect a person's thinking, feeling, mood or behavior, such as depression, anxiety, bipolar disorder, or schizophrenia (Centers for Disease Control and Prevention, 2018).

Physical health and mental health are inter-dependent. Poor physical health can lead to poor mental health, and poor mental health can lead to poor physical health. For example, mental illness, particularly depression, puts individuals at a higher risk for physical health problems such as stroke, type 2 diabetes and heart disease. Likewise, individuals who have chronic physical health conditions are at a higher risk for mental illness (Centers for Disease Control and Prevention, 2018). In 2018, 19.3% of adults in the U.S. with mental illness also had a substance use disorder, which is the equivalent of about 9.2 million individuals (National Alliance on Mental Illness, 2019).

Mental health and mental disorders have a significant impact on the total health-care system. In 2016, there were over 56.7 million visits to physician offices in which mental, behavioral or neurodevelopmental disorders were the primary diagnosis (Rui & Okeyode, 2019). The impact of mental illness is large. Mood disorders that include major depression, dysthymic disorder and bipolar disorder are the third leading cause of hospitalization for U.S. adults aged 18-44. 1 out of every 25 U.S. adults has a condition called serious mental illness (SMI), in which individuals experience a mental illness or disorder in the past year "with serious functional impairment that substantially interferes with or limits one or more major life activities". Individuals living with SMI are at a higher risk for developing physical health problems like heart disease, diabetes, and human immunodeficiency virus (HIV) and have a shorter lifespan than others (Centers for Disease Control and Prevention, 2018).

Adverse childhood experiences (ACEs) are stressful or traumatic events that occur in childhood (0-17 years), including abuse and neglect. They may also include household dysfunction such as witnessing domestic

violence or growing up with family members who have substance use disorders (Centers for Disease Control and Prevention, 2019). Experiences people have in early childhood can have a lifelong effect on both physical and mental health. A look at these experiences can help to focus on people likely to need special attention (Anda & Felitti, 2014), but more research is needed to determine if and how the potential benefits of screening for ACEs outweigh the potential harms (Afifi & Asmundson, 2020; McLennan, McTavish, & MacMillan, 2020).

Research has demonstrated a strong relationship between adverse childhood experiences, substance use disorders, and behavioral problems. When children are exposed to chronic stressful events, their neurodevelopment can be disrupted. As a result, the child's cognitive functioning or ability to cope with negative or disruptive emotions may be impaired. Over time, and often during adolescence, the child may adopt negative coping mechanisms, such as substance use or self-harm. Eventually, these unhealthy coping mechanisms can contribute to disease, disability and social problems, as well as premature mortality.

Mental Health and Adverse Childhood Experiences Results

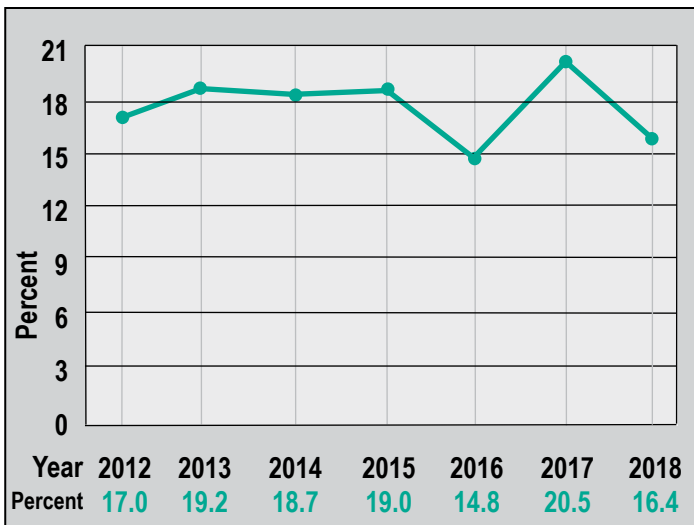
In 2018, 16.4% of adults reported that they had been told within their lifetime that they had a depressive disorder, including depression, major depression, dysthymia or minor depression about various chronic conditions. This is significantly lower than in 2017 when it was 20.5%. There has been an overall decrease in diagnosed depression rates from the lowest reported rates in the last 6 years; the highest rates were seen in 2017 (20.5%) and the lowest were seen in 2016 (14.8%). The rate for 2018 (16.4%) is most similar to the rate in 2012, when 17.0% of adult Iowans reported having been told they had a depressive disorder in their lifetime (see Figure 21.1).

FACT

In the U.S., 9.2 million people with mental illness also had a substance use disorder.

Mental Health and Adverse Childhood Experiences (ACEs) *continued*

Figure 21.1: Iowans Ever told they had Depression by Year, 2012-2018



The prevalence of depression was greater among women and lower income individuals and less among those aged 65 years and older. The highest prevalence was among those with annual household incomes less than \$15,000 (31.3%). The lowest prevalence was among those age 75 years or more (7.8%; see Table 21.1).

In 2018, BRFSS contained questions that explore the early childhood experiences of respondents. Respondents were asked to recall experiences they had before they were 18 years old specifically surrounding childhood abuse and neglect as well as household dysfunction. This data is then used to assess the impact of these childhood experiences on health and well-being in adult years. Questions used in the BRFSS are adapted from the CDC-Kaiser Permanente ACE study conducted from 1995 to 1997.

Three modules were assessed in 2018: adverse childhood experiences (ACEs), physical and emotional neglect, and resilience. Rather than look at each question individually from these modules, a single score will be determined for each module based on all of the responses to the questions in that module.

ACEs look at a wide range of experiences from parents such as divorced, incarcerated, or drug abusing to physical, psychological or sexual abuse. This module contained 11 questions. For Iowans, 39.3% indicated no adverse childhood experiences, 22.5% indicated one, 21.2%

Table 21.1: Prevalence of Depression in Iowa Adults, 2018

Demographic Groups	Depressive Disorder	
	Prevalence Rate	C.I. (95%)
Total	16.4	(15.5-17.3)
Sex		
Male	11.5	(10.4-12.5)
Female	21.1	(19.7-22.5)
Race/Ethnicity		
White/Non-Hispanic	16.5	(15.6-17.4)
Black/Non-Hispanic	20.3	(13.2-27.4)
Other/Non-Hispanic	18.3	(13.2-23.5)
Hispanic	11.5	(8.0-15.0)
Age Group		
18-24	19.1	(15.8-22.4)
25-34	19.9	(17.3-22.6)
35-44	18.4	(16.1-20.7)
45-54	17.8	(15.6-20.0)
55-64	16.7	(14.9-18.6)
65-74	11.9	(10.2-13.6)
75+	7.8	(6.0-9.5)
Education		
Less Than H.S.	16.7	(13-20.5)
H.S. or G.E.D.	16.2	(14.6-17.7)
Some Post-H.S.	18.4	(16.7-20.0)
College Graduate	14.0	(12.6-15.3)
Household Income		
Less than \$15,000	31.3	(26.6-36.0)
\$15,000- 24,999	26.1	(23.1-29.2)
\$25,000- 34,999	20.7	(17.3-24.2)
\$35,000- 49,999	15.8	(13.4-18.2)
\$50,000- 74,999	13.1	(11.1-15.1)
\$75,000+	10.9	(9.6-12.2)

indicated two or three, 9.3% indicated four or five, and 7.6% indicated six or more.

The resilience and physical and emotional neglect modules both contained six questions. A higher score on these modules indicated a more positive experience during childhood. For resilience, each question was scored from zero to four points with four being the most positive. The maximum score on the resilience module was 24. Just over half of Iowans, 51.2%, scored between 19 and 24 points on this module, indicating a high level of resilience before they were 18 years of age.

Mental Health and Adverse Childhood Experiences (ACEs) *continued*

However, 4.2%, or 40,740 adult Iowans scored between zero and six points, indicating the lowest levels of resilience when they were growing up. The mean was a score of 18 and the median was 19.

For physical and emotional neglect, each question was scored from zero to three points with three being the most positive. 46.9% scored a full 18 points for the module, which was a decrease from 54.3% in 2017. About 14,705 adult Iowans (1.4%) scored six points or less, indicating having experienced a high level of childhood neglect.

Table 21.2 shows that depression, frequent mental distress, and days of bad physical health were more prevalent for Iowans who reported 2 or more adverse childhood experiences (ACEs). As the number of reported ACEs increased, so did the prevalence rate of depression, frequent mental distress and number of bad physical health days (see Table 21.2). For example, in adult Iowans who reported zero ACEs, 6.8% had depression, while in Iowans who reported 6 or more ACEs, the figure was 42.4%. For other information related to mental health see Chapter 4 on general health status and health-related quality of life.

Health Objectives for the Nation

Healthy People 2020 proposed a goal to reduce the number of people who have experienced a major depressive episode to 5.8%. The 2018 Iowa BRFSS shows 16.4% of adult Iowans reporting ever having a depressive disorder, though this figure could include depression, major depression, dysthymia or minor depression. Although the statistics do not line up perfectly, this figure is lower than that of 2017, indicating a move in the right direction towards the Healthy People 2020 goal.

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Table 21.2: Percent of Mental and Physical Health Measures by Number of Adverse Childhood Experiences (ACEs)

ACEs	Depression		Frequent Mental Distress (FMD)		>14 Days Bad Physical Health	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
0	6.8	(5.8-7.7)	5.2	(4.3-6.2)	7.0	(6.0-8.0)
1	11.9	(10.2-13.6)	5.0	(3.8-6.2)	7.1	(5.8-8.4)
2 or 3	21.5	(19.1-23.9)	12.3	(10.4-14.3)	10.7	(8.9-12.4)
4 or 5	28.2	(24.3-32.2)	18.0	(14.6-21.5)	15.0	(11.9-18.1)
6 or more	42.4	(37.3-47.5)	29.8	(24.8-34.8)	17.5	(13.6-21.4)

Appendix – Iowa 2018 BRFSS Questionnaire

Section 1: Health Status

1.1 Would you say that in general your health is—

Please read:

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair, or
- 5 Poor

Do not read:

- 7 Don't know / Not sure
- 9 Refused

Section 2: Healthy Days – Health-Related Quality of Life

2.1 Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

- __ Number of days
- 88 None
 - 77 Don't know / Not sure
 - 99 Refused

2.2 Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

- __ Number of days
- 88 None [If Q2.1 and Q2.2 = 88 (None), go to next section]
 - 77 Don't know / Not sure
 - 99 Refused

2.3 During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

- __ Number of days
- 88 None
 - 77 Don't know / Not sure
 - 99 Refused

Section 3: Health Care Access

3.1 Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, government plans such as Medicare, or Indian Health Service?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

3.2 Do you have one person you think of as your personal doctor or health care provider?

If No, ask: "Is there more than one, or is there no person who you think of as your personal doctor or health care provider?"

- 1 Yes, only one
- 2 More than one
- 3 No
- 7 Don't know / Not sure
- 9 Refused

3.3 Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

3.4 About how long has it been since you last visited a doctor for a routine checkup?

INTERVIEWER NOTE: A ROUTINE CHECKUP IS A GENERAL PHYSICAL EXAM, NOT AN EXAM FOR A SPECIFIC INJURY, ILLNESS, OR CONDITION.

Read if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years ago)
- 3 Within the past 5 years (2 years but less than 5 years ago)
- 4 5 or more years ago
- 7 Don't know / Not sure
- 8 Never
- 9 Refused

Section 4: Exercise

4.1 During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?

INTERVIEWER INSTRUCTION: IF RESPONDENT DOES NOT HAVE A REGULAR JOB OR IS RETIRED, THEY MAY COUNT ANY PHYSICAL ACTIVITY OR EXERCISE THEY DO

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

Section 5: Inadequate Sleep

5.1 On average, how many hours of sleep do you get in a 24-hour period?

INTERVIEWER NOTE: Enter hours of sleep in whole numbers, rounding 30 minutes (1/2 hour) or more up to the next whole hour and dropping 29 or fewer minutes.

- __ Number of hours [01-24]
- 7 7 Don't know / Not sure
 - 9 9 Refused

Section 6: Chronic Health Conditions

Has a doctor, nurse, or other health professional EVER told you that you had any of the following? For each, tell me Yes, No, Or You're Not Sure.

6.1 (Ever told) you that you had a heart attack also called a myocardial infarction?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.2 (Ever told) you had angina or coronary heart disease?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.3 (Ever told) you had a stroke?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.4 (Ever told) you had asthma?

- 1 Yes
- 2 No [Go to Q6.6]
- 7 Don't know / Not sure [Go to Q6.6]
- 9 Refused [Go to Q6.6]

6.5 Do you still have asthma?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.6 (Ever told) you had skin cancer?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

6.7 (Ever told) you had any other types of cancer?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.8 (Ever told) you have chronic obstructive pulmonary disease, C.O.P.D., emphysema or chronic bronchitis?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.9 (Ever told) you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

INTERVIEWER NOTE: Arthritis diagnoses include:

- rheumatism, polymyalgia rheumatica
- osteoarthritis (not osteoporosis)
- tendonitis, bursitis, bunion, tennis elbow
- carpal tunnel syndrome, tarsal tunnel syndrome
- joint infection, Reiter's syndrome
- ankylosing spondylitis; spondylosis
- rotator cuff syndrome
- connective tissue disease, scleroderma, polymyositis, Raynaud's syndrome
- vasculitis (giant cell arteritis, Henoch-Schonlein purpura, Wegener's granulomatosis, polyarteritis nodosa)

6.10 (Ever told) you have a depressive disorder (including depression, major depression, dysthymia, or minor depression)?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.11 Not including kidney stones, bladder infection or incontinence, were you ever told you have kidney disease?

INTERVIEWER NOTE: Incontinence is not being able to control urine flow.

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

6.12 (Ever told) you have diabetes?

INTERVIEWER NOTE: IF YES AND RESPONDENT IS FEMALE, ASK: "WAS THIS ONLY WHEN YOU WERE PREGNANT?" IF RESPONDENT SAYS PRE-DIABETES OR BORDERLINE DIABETES, USE RESPONSE CODE 4.

- 1 Yes
- 2 Yes, but female told only during pregnancy
- 3 No
- 4 No, pre-diabetes or borderline diabetes
- 7 Don't know / Not sure
- 9 Refused

CATI NOTE: If Q6.12 = 1 (Yes), go to next question. If any other response to Q6.12, go to Pre-Diabetes Optional Module (if used). Otherwise, go to next section.

6.13 How old were you when you were told you have diabetes?

- __ Code age in years [97 = 97 and older]
- 98 Don't know / Not sure
- 99 Refused

[CATI NOTE: Go to Diabetes Optional Module]

Module 1: Pre-Diabetes (Form A)

NOTE: Only asked of those not responding Yes (code = 1) to Core Q6.12 (Diabetes awareness question).

1. Have you had a test for high blood sugar or diabetes within the past three years?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

CATI NOTE: If Core Q6.12 = 4 (No, pre-diabetes or borderline diabetes); answer Q2 Yes (code = 1).

2. Have you ever been told by a doctor or other health professional that you have pre-diabetes or borderline diabetes?

If Yes and respondent is female, ask: Was this only when you were pregnant?

- 1 Yes
- 2 Yes, during pregnancy
- 3 No
- 7 Don't know / Not sure
- 9 Refused

Module 2: Diabetes

CATI NOTE: To be asked following Core Q6.13; if response to Q6.12 is Yes (code = 1)

1. Are you now taking insulin?

- 1 Yes
- 2 No
- 9 Refused

2. About how often do you check your blood for glucose or sugar?

INTERVIEWER NOTE: Include times when checked by a family member or friend, but do not include times when checked by a health professional.

- 1 __ Times per day
- 2 __ Times per week
- 3 __ Times per month
- 4 __ Times per year
- 888 Never
- 777 Don't know / Not sure
- 999 Refused

INTERVIEWER NOTE: If the respondent uses a continuous glucose monitoring system (a sensor inserted under the skin to check glucose levels continuously), fill in '98 times per day.'

3. Including times when checked by a family member or friend, about how often do you check your feet for any sores or irritations?

- 1 __ Times per day
- 2 __ Times per week
- 3 __ Times per month
- 4 __ Times per year
- 555 No feet
- 888 Never
- 777 Don't know / Not sure
- 999 Refused

4. About how many times in the past 12 months have you seen a doctor, nurse, or other health professional for your diabetes?

- __ Number of times [76 = 76 or more]
- 88 None
- 77 Don't know / Not sure
- 99 Refused

5. About how many times in the past 12 months has a doctor, nurse, or other health professional checked you for A-one-C?

INTERVIEWER NOTE: A TEST FOR A ONE C MEASURES THE AVERAGE LEVEL OF BLOOD SUGAR OVER THE PAST THREE MONTHS.

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

- __ Number of times [76 = 76 or more]
- 8 8 None
- 98 Never heard of A one C test
- 77 Don't know / Not sure
- 99 Refused

CATI NOTE: If Q3 = 555 (No feet), go to Q7.

6. About how many times in the past 12 months has a health professional checked your feet for any sores or irritations?

- __ Number of times [76 = 76 or more]
- 88 None
- 77 Don't know / Not sure
- 99 Refused

7. When was the last time you had an eye exam in which the pupils were dilated, making you temporarily sensitive to bright light?

Read only if necessary:

- 1 Within the past month (anytime less than 1 month ago)
- 2 Within the past year (1 month but less than 12 months ago)
- 3 Within the past 2 years (1 year but less than 2 years ago)
- 4 2 or more years ago

Do not read:

- 7 Don't know / Not sure
- 8 Never
- 9 Refused

8. Has a doctor ever told you that diabetes has affected your eyes or that you had retinopathy?

Do not read:

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

9. Have you ever taken a course or class in how to manage your diabetes yourself?

Do not read:

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

Section 7: Oral Health

7.1 Including all types of dentists, such as orthodontists, oral surgeons, and all other dental specialists as well as dental hygienists, how long has it been since you last visited a dentist or a dental clinic for any reason?

Read only if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years ago)
- 3 Within the past 5 years (2 years but less than 5 years ago)
- 4 5 or more years ago

Do not read:

- 7 Don't know / Not sure
- 8 Never
- 9 Refused

7.2 Not including teeth lost for injury or orthodontics, how many of your permanent teeth have been removed because of tooth decay or gum disease?

INTERVIEWER NOTE: If wisdom teeth are removed because of tooth decay or gum disease, they should be included in the count for lost teeth.

Read if necessary:

- 1 1 to 5
- 2 6 or more but not all
- 3 All
- 8 None

Do not read:

- 7 Don't know / Not sure
- 9 Refused

Section 8: Demographics

8.1 What was your sex at birth? Was it...

CATI NOTE: STATES MAY ADOPT ONE OF THE TWO FORMATS OF THE QUESTION. IF SECOND FORMAT IS USED, READ OPTIONS.

- 1 Male
- 2 Female
- 7 Don't know / Not sure
- 9 Refused

8.2 What is your age?

- __ Code age in years
- 07 Don't know / Not sure
- 09 Refused

8.3 Are you Hispanic, Latino/a, or Spanish origin?

If yes, ask: Are you...

INTERVIEWER NOTE: One or more categories may be selected.

- 1 Mexican, Mexican American, Chicano/a
- 2 Puerto Rican
- 3 Cuban
- 4 Another Hispanic, Latino/a, or Spanish origin

Do not read:

- 5 No
- 7 Don't know / Not sure
- 9 Refused

8.4 Which one or more of the following would you say is your race?

INTERVIEWER NOTE: Select all that apply.

INTERVIEWER NOTE: IF 40 (Asian) or 50 (Pacific Islander) is selected read and code subcategories underneath major heading.

Please read:

- 10 White
- 20 Black or African American
- 30 American Indian or Alaska Native
- 40 Asian
- 41 Asian Indian
- 42 Chinese
- 43 Filipino
- 44 Japanese
- 45 Korean
- 46 Vietnamese
- 47 Other Asian
- 50 Pacific Islander
- 51 Native Hawaiian
- 52 Guamanian or Chamorro
- 53 Samoan
- 54 Other Pacific Islander

Do not read:

- 60 Other
- 88 No additional choices
- 77 Don't know / Not sure
- 99 Refused

CATI NOTE: If more than one response to Q8.4; continue. Otherwise, go to Q8.6.

8.5 Which one of these groups would you say best represents your race?

INTERVIEWER NOTE: IF RESPONDENT HAS SELECTED MULTIPLE RACES IN PREVIOUS AND REFUSES TO SELECT A SINGLE RACE, CODE "REFUSED."

INTERVIEWER NOTE: If 40 (Asian) or 50 (Pacific Islander) is selected read and code subcategory underneath major heading.

- 10 White
- 20 Black or African American
- 30 American Indian or Alaska Native
- 40 Asian
- 41 Asian Indian

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

- 42 Chinese
- 43 Filipino
- 44 Japanese
- 45 Korean
- 46 Vietnamese
- 47 Other Asian
- 50 Pacific Islander
- 51 Native Hawaiian
- 52 Guamanian or Chamorro
- 53 Samoan
- 54 Other Pacific Islander

Do not read:

- 60 Other
- 77 Don't know / Not sure
- 99 Refused

8.6 Are you...?

Please read:

- 1 Married
- 2 Divorced
- 3 Widowed
- 4 Separated
- 5 Never married or
- 6 A member of an unmarried couple

Do not read:

- 9 Refused

8.7 What is the highest grade or year of school you completed?

Read only if necessary:

- 1 Never attended school or only attended kindergarten
- 2 Grades 1 through 8 (Elementary)
- 3 Grades 9 through 11 (Some high school)
- 4 Grade 12 or GED (High school graduate)
- 5 College 1 year to 3 years (Some college or technical school)
- 6 College 4 years or more (College graduate)

Do not read:

- 9 Refused

8.8 Do you own or rent your home?

- 1 Own
- 2 Rent
- 3 Other arrangement
- 7 Don't know / Not sure
- 9 Refused

INTERVIEWER NOTE: Other arrangement may include group home, staying with friends or family without paying rent.

NOTE: Home is defined as the place where you live most of the time/the majority of the year.

INTERVIEWER NOTE: We ask this question in order to compare health indicators among people with different housing situations.

8.9 In what county do you currently live?

- __ _ ANSI County Code (formerly FIPS county code)
- 777 Don't know / Not sure
- 999 Refused

8.10 What is the ZIP Code where you currently live?

- __ _ __ _ ZIP Code
- 77777 Don't know / Not sure
- 99999 Refused

CATI NOTE: If cellular telephone interview skip to 8.14 (QSTVER GE 20)

8.11 Not including cell phones or numbers used for computers, fax machines or security systems, do you have more than one telephone number in your household?

- 1 Yes
- 2 No [Go to Q8.13]
- 7 Don't know / Not sure [Go to Q8.13]
- 9 Refused [Go to Q8.13]

8.12 How many of these telephone numbers are residential numbers?

- __ Residential telephone numbers [6 = 6 or more]
- 7 Don't know / Not sure
- 9 Refused

8.13 How many cell phones do you have for personal use?

INTERVIEWER NOTE: INCLUDE CELL PHONES USED FOR BOTH BUSINESS AND PERSONAL USE.

- __ Enter number (1-5) [6 = 6 or more]
- 7 Don't know / Not sure
- 8 None
- 9 Refused

8.14 Have you ever served on active duty in the United States Armed Forces, either in the regular military or in a National Guard or military reserve unit?

INTERVIEWER NOTE: Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the Persian Gulf War.

- 1 Yes
- 2 No

Do not read:

- 7 Don't know / Not sure
- 9 Refused

8.15 Are you currently...?

INTERVIEWER NOTE: IF MORE THAN ONE, SAY "SELECT THE CATEGORY WHICH BEST DESCRIBES YOU".

Please read:

- 1 Employed for wages
- 2 Self-employed
- 3 Out of work for 1 year or more
- 4 Out of work for less than 1 year
- 5 A Homemaker
- 6 A Student
- 7 Retired or
- 8 Unable to work

Do not read:

- 9 Refused

8.16 How many children less than 18 years of age live in your household?

- __ _ Number of children
- 88 None
- 99 Refused

8.17 Is your annual household income from all sources—

If respondent refuses at ANY income level, code '99' (Refused)

Read only if necessary:

- 04 Less than \$25,000 If no, ask 05; if yes, ask 03 (\$20,000 to less than \$25,000)
- 03 Less than \$20,000 If no, code 04; if yes, ask 02 (\$15,000 to less than \$20,000)
- 02 Less than \$15,000 If no, code 03; if yes, ask 01 (\$10,000 to less than \$15,000)
- 01 Less than \$10,000 If no, code 02
- 05 Less than \$35,000 If no, ask 06 (\$25,000 to less than \$35,000)
- 06 Less than \$50,000 If no, ask 07 (\$35,000 to less than \$50,000)
- 07 Less than \$75,000 If no, code 08 (\$50,000 to less than \$75,000)
- 08 \$75,000 or more

Do not read:

- 77 Don't know / Not sure
- 99 Refused

8.18 About how much do you weigh without shoes?

NOTE: If respondent answers in metrics, put 9 in column XXX. Round fractions up

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

__ __ __ Weight (pounds/kilograms)

7777 Don't know / Not sure

9999 Refused

8.19 About how tall are you without shoes?

NOTE: If respondent answers in metrics, put 9 in column XXX.

Round fractions up

__ / __ Height (ft / inches/meters/centimeters)

77 / 77 Don't know / Not sure

99 / 99 Refused

If male, go to 8.21, if female respondent is 50 years old or older, go to Q8.21

8.20 To your knowledge, are you now pregnant?

1 Yes

2 No

7 Don't know / Not sure

9 Refused

Some people who are deaf or have serious difficulty hearing use assistive devices to communicate by phone.

8.21 Are you deaf or do you have serious difficulty hearing?

1 Yes

2 No

7 Don't know / Not Sure

9 Refused

8.22 Are you blind or do you have serious difficulty seeing, even when wearing glasses?

1 Yes

2 No

7 Don't know / Not Sure

9 Refused

8.23 Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?

1 Yes

2 No

7 Don't know / Not sure

9 Refused

8.24 Do you have serious difficulty walking or climbing stairs?

1 Yes

2 No

7 Don't know / Not sure

9 Refused

8.25 Do you have difficulty dressing or bathing?

1 Yes

2 No

7 Don't know / Not sure

9 Refused

8.26 Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?

1 Yes

2 No

7 Don't know / Not sure

9 Refused

Section 9: Tobacco Use

9.1 Have you smoked at least 100 cigarettes in your entire life?

INTERVIEWER NOTE: FOR CIGARETTES, DO NOT INCLUDE: ELECTRONIC CIGARETTES (E-CIGARETTES, NJOY, BLUETIP), HERBAL CIGARETTES, CIGARS, CIGARILLOS, LITTLE CIGARS, PIPES, BIDIS, KRETEKS, WATER PIPES (HOOKAHS) OR MARIJUANA.

NOTE: 5 packs = 100 cigarettes

1 Yes

2 No [Go to Q9.5]

7 Don't know / Not sure [Go to Q9.5]

9 Refused [Go to Q9.5]

9.2 Do you now smoke cigarettes every day, some days, or not at all?

Do not read:

1 Every day

2 Some days

3 Not at all [Go to Q9.4]

7 Don't know / Not sure [Go to Q9.5]

9 Refused [Go to Q9.5]

9.3 During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?

1 Yes [Go to Q9.5]

2 No [Go to Q9.5]

7 Don't know / Not sure [Go to Q9.5]

9 Refused [Go to Q9.5]

9.4 How long has it been since you last smoked a cigarette, even one or two puffs?

Read if necessary:

01 Within the past month (less than 1 month ago)

02 Within the past 3 months (1 month but less than 3 months ago)

03 Within the past 6 months (3 months but less than 6 months ago)

04 Within the past year (6 months but less than 1 year ago)

05 Within the past 5 years (1 year but less than 5 years ago)

06 Within the past 10 years (5 years but less than 10 years ago)

07 10 years or more

08 Never smoked regularly

77 Don't know / Not sure

99 Refused

9.5 Do you currently use chewing tobacco, snuff, or snus every day, some days, or not at all? *Snus (rhymes with 'goose')*

INTERVIEWER NOTE: Snus (Swedish for snuff) is a moist smokeless tobacco, usually sold in small pouches that are placed under the lip against the gum.

Do not read:

1 Every day

2 Some days

3 Not at all

Do not read:

7 Don't know / Not sure

9 Refused

Section 10: Alcohol Consumption

10.1 During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?

1 __ Days per week

2 __ Days in past 30 days

888 No drinks in past 30 days [Go to next section]

777 Don't know / Not sure [Go to next section]

999 Refused [Go to next section]

10.2 One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on the average?

INTERVIEWER NOTE: A 40 ounce beer would count as 3 drinks, or a cocktail drink with 2 shots would count as 2 drinks.

__ Number of drinks

77 Don't know / Not sure

99 Refused

10.3 Considering all types of alcoholic beverages, how many times during the past 30 days did you have X [CATI X = 5 for men, X = 4 for women] or more drinks on an occasion?

__ Number of times

88 None

77 Don't know / Not sure

99 Refused

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

10.4 During the past 30 days, what is the largest number of drinks you had on any occasion?

- __ Number of drinks
- 77 Don't know / Not sure
- 99 Refused

Section 11: Immunization

11.1 During the past 12 months, have you had either a flu shot or a flu vaccine that was sprayed in your nose?

Read if necessary: "A new flu shot came out in 2011 that injects vaccine into the skin with a very small needle. It is called Fluzone Intradermal vaccine. This is also considered a flu shot."

- 1 Yes
- 2 No [Go to Q11.4]
- 7 Don't know / Not sure [Go to Q11.4]
- 9 Refused [Go to Q11.4]

11.2 During what month and year did you receive your most recent flu shot injected into your arm or flu vaccine that was sprayed in your nose?

- __ / ____ Month / Year
- 77 / 7777 Don't know / Not sure
- 99 / 9999 Refused

11.3 At what kind of place did you get your last flu shot or vaccine?

Read only if necessary:

- 01 A doctor's office or health maintenance organization (HMO)
- 02 A health department
- 03 Another type of clinic or health center (a community health center)
- 04 A senior, recreation, or community center
- 05 A store (supermarket, drug store)
- 06 A hospital (inpatient)
- 07 An emergency room
- 08 Workplace
- 09 Some other kind of place
- 11 A school

Do not read:

- 10 Received vaccination in Canada/Mexico
- 77 Don't know / Not sure (Probe: "How would you describe the place where you went to get your most recent flu vaccine?")
- 99 Refused

11.4 Have you ever had a pneumonia shot also known as apneumococcal vaccine?

INTERVIEWER NOTE: IF RESPONDENT IS CONFUSED READ: THERE ARE TWO TYPES OF PNEUMONIA SHOTS: POLYSACCHARIDE, ALSO KNOWN AS PNEUMOVAX, AND CONJUGATE, ALSO KNOWN AS PREVNAR.

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

Section 12: Falls

If respondent is 45 years or older continue, otherwise go to next section.

12.1 In the past 12 months, how many times have you fallen?

- __ Number of times [76 = 76 or more]
- 88 None [Go to next section]
- 77 Don't know / Not sure [Go to next section]
- 99 Refused [Go to next section]

INTERVIEWER NOTE: By a fall, we mean when a person unintentionally comes to rest on the ground or another lower level.

12.2 [Fill in if C12.1=1 Did this fall cause an injury that limited your regular activities for at least a day or caused you to go see a doctor?]. If only one fall from Q12.1 and response is Yes (caused an injury); code 01. If response is No, code 88.

How many of these falls caused an injury that limited your regular activities for at least a day or caused you to go to see a doctor?

INTERVIEWER NOTE: By an injury, we mean the fall caused you to limit your regular activities for at least a day or to go see a doctor.

- __ Number of falls [76 = 76 or more]
- 88 None
- 77 Don't know / Not sure
- 99 Refused

Section 13: Seat Belt Use and Drinking and Driving

13.1 How often do you use seat belts when you drive or ride in a car?

Would you say...

Please read:

- 1 Always
- 2 Nearly always
- 3 Sometimes
- 4 Seldom
- 5 Never

Do not read:

- 7 Don't know / Not sure
- 8 Never drive or ride in a car
- 9 Refused

CATI NOTE: If Q13.1 = 8 (Never drive or ride in a car), go to next section; otherwise continue.

CATI note: If Q10.1 = 888 (No drinks in the past 30 days); go to next section.

13.2 During the past 30 days, how many times have you driven when you've had perhaps too much to drink?

- __ Number of times
- 88 None
- 77 Don't know / Not sure
- 99 Refused

Section 14: Breast and Cervical Cancer Screening

CATI NOTE: If male go to the next section.

The next questions are about breast and cervical cancer.

14.1 Have you ever had a mammogram?

INTERVIEWER NOTE: A mammogram is an x-ray of each breast to look for breast cancer.

- 1 Yes
- 2 No [Go to Q14.3]
- 7 Don't know / Not sure [Go to Q14.3]
- 9 Refused [Go to Q14.3]

14.2 How long has it been since you had your last mammogram?

Read if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years ago)
- 3 Within the past 3 years (2 years but less than 3 years ago)
- 4 Within the past 5 years (3 years but less than 5 years ago)
- 5 5 or more years ago
- 7 Don't know / Not sure
- 9 Refused

14.3 Have you ever had a Pap test?

INTERVIEWER NOTE: A Pap test is a test for cancer of the cervix.

- 1 Yes
- 2 No [Go to Q14.5]
- 7 Don't know / Not sure [Go to Q14.5]
- 9 Refused [Go to Q14.5]

14.4 How long has it been since you had your last Pap test?

Read if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years ago)
- 3 Within the past 3 years (2 years but less than 3 years ago)
- 4 Within the past 5 years (3 years but less than 5 years ago)
- 5 5 or more years ago
- 7 Don't know / Not sure
- 9 Refused

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

14.5 An H.P.V. test is sometimes given with the Pap test for cervical cancer screening. Have you ever had an H.P.V. test?

INTERVIEWER NOTE: HUMAN PAPILOMAVIRUS (PAP-UH-LOH-MUH VIRUS)

- 1 Yes
- 2 No [Go to Q14.7]
- 7 Don't know/Not sure [Go to Q14.7]
- 9 Refused [Go to Q14.7]

14.6 How long has it been since you had your last H.P.V. test?

Read if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years ago)
- 3 Within the past 3 years (2 years but less than 3 years ago)
- 4 Within the past 5 years (3 years but less than 5 years ago)
- 5 5 or more years ago
- 7 Don't know / Not sure
- 9 Refused

CATI NOTE: If response to Core Q8.20 = 1 (is pregnant); then go to next section.

14.7 Have you had a hysterectomy?

INTERVIEWER NOTE: A HYSTERECTOMY IS AN OPERATION TO REMOVE THE UTERUS (WOMB).

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

Section 15: Prostate Cancer Screening

CATI NOTE: If respondent is <39 years of age, or is female, go to next section.

15.1 Has a doctor, nurse, or other health professional ever talked with you about the advantages of the Prostate-Specific Antigen or P.S.A. test?

INTERVIEWER NOTE: A PROSTATE-SPECIFIC ANTIGEN TEST, ALSO CALLED A P.S.A. TEST, IS A BLOOD TEST USED TO CHECK MEN FOR PROSTATE CANCER.

- 1 Yes
- 2 No
- 7 Don't Know / Not sure
- 9 Refused

15.2 Has a doctor, nurse, or other health professional ever talked with you about the disadvantages of the P.S.A. test?

- 1 Yes
- 2 No
- 7 Don't Know / Not sure
- 9 Refused

15.3 Has a doctor, nurse, or other health professional ever recommended that you have a P.S.A. test?

- 1 Yes
- 2 No
- 7 Don't Know / Not sure
- 9 Refused

15.4 Have you ever had a P.S.A. test?

- 1 Yes
- 2 No [Go to next section]
- 7 Don't Know / Not sure [Go to next section]
- 9 Refused [Go to next section]

15.5 How long has it been since you had your last P.S.A. test?

Read only if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years)
- 3 Within the past 3 years (2 years but less than 3 years)
- 4 Within the past 5 years (3 years but less than 5 years)
- 5 5 or more years ago

Do not read:

- 7 Don't know / Not sure
- 9 Refused

15.6 What was the main reason you had this P.S.A. test – was it ...?

Please read:

- 1 Part of a routine exam
- 2 Because of a prostate problem
- 3 Because of a family history of prostate cancer
- 4 Because you were told you had prostate cancer
- 5 Some other reason

Do not read:

- 7 Don't know / Not sure
- 9 Refused

Section 16: Colorectal Cancer Screening

CATI NOTE: If respondent is < 49 years of age, go to next section.

16.1 A blood stool test is a test that may use a special kit at home to determine whether the stool contains blood. Have you ever had this test using a home kit?

- 1 Yes
- 2 No [Go to Q16.3]
- 7 Don't know / Not sure [Go to Q16.3]
- 9 Refused [Go to Q16.3]

16.2 How long has it been since you had your last blood stool test using a home kit?

Read only if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years ago)
- 3 Within the past 3 years (2 years but less than 3 years ago)
- 4 Within the past 5 years (3 years but less than 5 years ago)
- 5 5 or more years ago

Do not read:

- 7 Don't know / Not sure
- 9 Refused

16.3 Sigmoidoscopy and colonoscopy are exams in which a tube is inserted in the rectum to view the colon for signs of cancer or other health problems. Have you ever had either of these exams?

- 1 Yes
- 2 No [Go to next section]
- 7 Don't know / Not sure [Go to next section]
- 9 Refused [Go to next section]

16.4 For a sigmoidoscopy, a flexible tube is inserted into the rectum to look for problems. A colonoscopy is similar, but uses a longer tube, and you are usually given medication through a needle in your arm to make you sleepy and told to have someone else drive you home after the test. Was your most recent exam a sigmoidoscopy or a colonoscopy?

- 1 Sigmoidoscopy
- 2 Colonoscopy
- 7 Don't know / Not sure
- 9 Refused

16.5 How long has it been since you had your last sigmoidoscopy or colonoscopy?

Read only if necessary:

- 1 Within the past year (anytime less than 12 months ago)
- 2 Within the past 2 years (1 year but less than 2 years ago)
- 3 Within the past 3 years (2 years but less than 3 years ago)
- 4 Within the past 5 years (3 years but less than 5 years ago)
- 5 Within the past 10 years (5 years but less than 10 years ago)
- 6 10 or more years ago

Do not read:

- 7 Don't know / Not sure
- 9 Refused

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

Section 17: H.I.V./AIDS

The next few questions are about the national health problem of H.I.V., the virus that causes AIDS. Please remember that your answers are strictly confidential and that you don't have to answer every question if you do not want to. Although we will ask you about testing, we will not ask you about the results of any test you may have had.

17.1 Have you ever been tested for H.I.V.? Do not count tests you may have had as part of a blood donation. Include testing fluid from your mouth.

- 1 Yes
- 2 No [Go to Q17.3]
- 7 Don't know / Not sure [Go to Q17.3]
- 9 Refused [Go to Q17.3]

17.2 Not including blood donations, in what month and year was your last H.I.V. test?

NOTE: If response is before January 1985, code Don't know.

CATI INSTRUCTION: If the respondent remembers the year but cannot remember the month, code the first two digits 77 and the last four digits for the year.

__/_/____ Code month and year

77/ 7777 Don't know / Not sure

99/ 9999 Refused / Not sure

17.3 I am going to read you a list. When I am done, please tell me if any of the situations apply to you. You do not need to tell me which one.

- You have injected any drug other than those prescribed for you in the past year.
- You have been treated for a sexually transmitted disease or STD in the past year.
- You have given or received money or drugs in exchange for sex in the past year.
- You had anal sex without a condom in the past year.
- You had four or more sex partners in the past year.

Do any of these situations apply to you?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

Module 6: E-Cigarettes

Read if necessary: Electronic cigarettes (e-cigarettes) and other electronic vaping products include electronic hookahs (e-hookahs), vape pens, e-cigars, and others. These products are battery-powered and usually contain nicotine and flavors such as fruit, mint, or candy.

INTERVIEWER NOTE: THESE QUESTIONS CONCERN ELECTRONIC VAPING PRODUCTS FOR NICOTINE USE. THE USE OF ELECTRONIC VAPING PRODUCTS FOR MARIJUANA USE IS NOT INCLUDED IN THESE QUESTIONS.

1. Have you ever used an e-cigarette or other electronic vaping product, even just one time, in your entire life?

- 1 Yes
- 2 No [GO TO NEXT MODULE]
- 7 Don't know / Not sure [GO TO NEXT MODULE]
- 9 Refused [GO TO NEXT MODULE]

2. Do you now use e-cigarettes or other electronic vaping products every day, some days, or not at all?

Do not read:

- 1 Every day
- 2 Some days
- 3 Not at all
- 7 Don't know / Not sure
- 9 Refused

State Added: Tobacco

[Ask if Q9.1 = 1 and Q9.2 = 1 or 2]

SATQ1 Currently, when you smoke cigarettes, how often do you smoke menthol cigarettes? Would you say...

- 1 All of the time,
- 2 Most of the time,
- 3 Some of the time,
- 4 Rarely, or
- 5 Never?
- 7 Don't know/Not sure
- 9 Refused

[Ask if Q9.1 = 1 AND (Q9.2 = 1 or 2 OR Q9.4 = 1)]

SATQ2 During the past 30 days, what brand of cigarettes did you buy MOST often?

Do not read:

- 01 American Spirit
- 02 Basic (Branded Discount)
- 03 Camel
- 04 Benson and Hedges
- 05 Capri
- 06 Carlton
- 07 Doral (Branded Discount)
- 08 GPC
- 09 Kent
- 10 Kool
- 11 Liggett
- 12 Marlboro Gold
- 13 Marlboro Menthol
- 14 Marlboro Red
- 15 Marlboro (Other)
- 16 Maverick
- 17 Merit
- 18 Misty
- 19 Monarch
- 20 Newport Box
- 21 Newport Menthol Blue
- 22 Newport Menthol Gold
- 23 Newport (Other)
- 24 Pall Mall
- 25 Parliament
- 26 Pyramid
- 27 Salem
- 28 Santa Fe
- 29 U.S.A. Gold
- 30 Viceroy
- 31 Virginia Slims
- 32 Winston
- 55 Other Specified Brand
- 66 Did Not Buy One Brand Most Often During Past 30 Days
- 88 Did Not Buy Any Cigarette During Past 30 Days
- 77 Don't know/Not sure
- 99 Refused

[FOR EVERYONE]

SATQ3 Do you now smoke cigars, cigarillos, or little filtered cigars every day, some days, rarely or not at all?

- 1 Every day,
- 2 Some days,
- 3 Rarely, or
- 4 Not at all?
- 8 Never
- 7 Don't know/Not sure
- 9 Refused

SATQ4 Do you now smoke a regular pipe filled with tobacco every day, some days, rarely or not at all?

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

- 1 Every day,
- 2 Some days,
- 3 Rarely, or
- 4 Not at all?
- 8 Never
- 7 Don't know/Not sure
- 9 Refused

SATQ6 Do you now smoke tobacco in a water pipe or hookah every day, some days, rarely or not at all?

- 1 Every day,
- 2 Some days,
- 3 Rarely, or
- 4 Not at all?
- 8 Never
- 7 Don't know/Not sure
- 9 Refused

[SKIP IF (Q9.1 >= 2) OR (Q9.2 >= 3) OR (Q9.3 = 1)]

SATQ11 During the past 12 months, have you made a serious attempt to stop smoking cigarettes because you were TRYING to quit – even if you stopped for less than a day?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

[ASK IF Q9.5 < 3 OR SATQ3 < 3 OR SATQ4 < 3 OR SATQ6 < 3]

SATQ12 During the past 12 months, have you made a serious attempt to stop using smokeless tobacco, cigars or pipe tobacco because you were TRYING to quit – even if you stopped for less than a day?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

[ASK IF Q9.3 = 1 OR Q9.4 < 5 OR SATQ11 = 1 OR SATQ12 = 1]

SATQ13 Thinking back to the (LAST TIME/time) you tried to QUIT smoking or quit using tobacco in the past 12 months. Did you do ANY of the following...

- a Call a telephone help line or quit line?
 - b Use an internet or web-based program, app, smartphone or tool?
 - c Try to quit by SWITCHING to electronic or E-cigarettes?
 - d Try to quit by SWITCHING to some other form of tobacco?
 - e Try to stop by setting a specific date to stop smoking or using tobacco?
 - f Try to quit cold turkey?
 - g Try to quit with the support of family or friends?
 - h Try to quit using medications that help people stop using tobacco?
- 1 Yes
 - 2 No
 - 7 Don't know/Not sure
 - 9 Refused

[ASK IF SATQ13h = 1]

SATQ15 Which medications did you use when you tried to quit? Did you use...

- a Nicotine patches?
 - b Nicotine gum?
 - c Nicotine lozenges?
 - d Nicotine spray?
 - e Nicotine inhaler?
 - f Zyban, also called Wellbutrin or bupropion?
 - g Chantix, also called varenicline?
 - h Other medications to help you quit?
- 1 Yes
 - 2 No
 - 7 Don't know/Not sure
 - 9 Refused

[ASK IF M6.2 = 1 or 2]

SATQ16 The next question is about the reasons people use e-cigarettes. Please tell me which reasons apply to you.

[INTERVIEWER NOTE: Say about E-cigarettes if required: "You may also know them as vape pens, hookah-pens, e-hookahs, e-vaporizers, e-cigars, or e-pipes."]

- a I can use e-cigarettes at times or in places where smoking cigarettes isn't allowed.
 - b They might be less harmful to me than cigarettes.
 - c They might be less harmful to people around me than cigarettes.
 - d Using e-cigarettes helps people to quit smoking cigarettes.
 - e They seem cheaper than cigarettes.
- 1 Yes
 - 2 No
 - 7 Don't know/Not sure
 - 9 Refused

[Skip to SATQ18A if Q3.4 = 1]

SATQ17 Excluding visits to a dentist or dental hygienist, in the past 12 months, have you seen a doctor, nurse or other health care professional?

[INTERVIEWER NOTE: Answer is "YES" if they visited doctor, nurse practitioner or physician's assistant for ANY reason, not just smoking.]

- 1 Yes
- 2 No [GO TO NEXT MODULE]
- 7 Don't Know/Not sure [GO TO NEXT MODULE]
- 9 Refused [GO TO NEXT MODULE]

[ASK IF Q9.2 = 1 or 2 OR Q9.4 < 5 OR Q9.5 = 1 or 2 OR SATQ3 = 1 or 2 OR SATQ4 = 1 or 2 OR SATQ6 = 1 or 2]

CATI/INTERVIEWER NOTE: E-cigarette users not asked and those who rarely use cigars, pipes, water pipes not asked.

SATQ18A In the PAST 12 MONTHS, when you visited your health care provider, did they ask about your tobacco use?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

SATQ18B In the PAST 12 MONTHS, when you visited your health care provider, did they advise you to stop smoking or using tobacco?

- 1 Yes
- 2 No [GO TO NEXT MODULE]
- 7 Don't know/Not sure [GO TO NEXT MODULE]
- 9 Refused [GO TO NEXT MODULE]

SATQ19 Which method, if any, did they advise you to use?

[DO NOT READ – SELECT ALL THAT APPLY]

- 1 Suggest you call or use a telephone or web-based quit line
- 2 Suggest you use a smoking or tobacco use cessation class, program, or counseling
- 3 Recommend or prescribe a medicine to help you quit
- 4 Suggest you set a specific date to stop smoking or using tobacco
- 5 Suggest you stop cold turkey
- 6 Suggest some other method to quit
- 8 Did NOT suggest a method to quit
- 7 Don't know/Not sure
- 9 Refused

State Added Secondhand Smoke (Form A)

SASSQ1 Not counting decks, porches, or garages, during the past 7 days, that is since last [TODAY'S DAY OF WEEK], on how many days did someone other than you smoke tobacco inside your home while you were at home?

- ___ NUMBER OF DAYS [1-7]
- 88 NONE
 - 77 Don't Know/Not Sure
 - 99 Refused

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

SASSQ2 Not counting decks, porches, or garages, inside your home, is smoking ...

[CATI/INTERVIEWER NOTE: The order of the response categories for this question is being randomly reversed.]

- 1 Always Allowed
- 2 Allowed only at some times or in some places, or
- 3 Never allowed

Do not read:

- 6 Family does not have a smoking policy
- 7 Don't know/Not sure
- 9 Refused

SASSQ3 Should tobacco use in parks be...

[CATI/INTERVIEWER NOTE: The order of the response categories for this question is being randomly reversed.]

- 1 Always Allowed
- 2 Allowed only at some times or in some places, or
- 3 Never allowed

Do not read:

- 7 Don't know/Not sure
- 9 Refused

State Added: Marijuana Use

SAMUQ1 During the past 30 days, on how many days did you use marijuana or cannabis?

- __ 01-30 Number of Days
- 88 None
- 77 Don't know/not sure
- 99 Refused

State Added: Preconception Health/Family Planning

[CATI NOTE: IF RESPONDENT IS FEMALE AND GREATER THAN 49 YEARS OF AGE, HAS HAD A HYSTERECTOMY, IS PREGNANT, OR IF RESPONDENT IS MALE GO TO THE NEXT MODULE.]

The next set of questions asks you about your thoughts and experiences with family planning. Please remember that all of your answers will be kept confidential.

SAPHFPQ1 Did you or your partner do anything the last time you had sex to keep you from getting pregnant?

- 1 Yes
- 2 No [GO TO Q3]
- 3 No partner/not sexually active [GO TO NEXT MODULE]
- 4 Same sex partner [GO TO NEXT MODULE]
- 7 Don't know/Not sure [GO TO Q3]
- 9 Refused [GO TO Q3]

SAPHFPQ2 What did you or your partner do the last time you had sex to keep you from getting pregnant?

INTERVIEWER NOTE: IF RESPONDENT REPORTS USING MORE THAN ONE METHOD, PLEASE CODE THE METHOD THAT OCCURS FIRST ON THE LIST.

INTERVIEWER NOTE: IF RESPONDENT REPORTS USING "CONDOMS," PROBE TO DETERMINE IF "FEMALE CONDOMS" OR MALE CONDOMS."

INTERVIEWER NOTE: IF RESPONDENT REPORTS USING AN "IUD" PROBE TO DETERMINE IF "LEVONORGESTREL IUD" OR "COPPER-BEARING IUD."

INTERVIEWER NOTE: IF RESPONDENT REPORTS "OTHER METHOD," ASK RESPONDENT TO "PLEASE BE SPECIFIC" AND ENSURE THAT THEIR RESPONSE DOES NOT FIT INTO ANOTHER CATEGORY. IF RESPONSE DOES FIT INTO ANOTHER CATEGORY, PLEASE MARK APPROPRIATELY.

Read only if necessary:

- 01 Female sterilization (ex. Tubal ligation, Essure, Adiana) [GO TO NEXT MODULE]
- 02 Male sterilization (vasectomy) [GO TO NEXT MODULE]
- 03 Contraceptive implant (ex. Implanon) [GO TO NEXT MODULE]

- 04 Levonorgestrel (LEE-voe-nor-JES-trel) (LNG) or hormonal IUD (ex. Mirena) [GO TO NEXT MODULE]
- 05 Copper-bearing IUD (ex. ParaGard) [GO TO NEXT MODULE]
- 06 IUD, type unknown [GO TO NEXT MODULE]
- 07 Shots (ex. Depo-Provera) [GO TO NEXT MODULE]
- 08 Birth control pills, any kind [GO TO NEXT MODULE]
- 09 Contraceptive patch (ex. Ortho Evra) [GO TO NEXT MODULE]
- 10 Contraceptive ring (ex. NuvaRing) [GO TO NEXT MODULE]
- 11 Male condoms [GO TO NEXT MODULE]
- 12 Diaphragm, cervical cap, sponge [GO TO NEXT MODULE]
- 13 Female condoms [GO TO NEXT MODULE]
- 14 Not having sex at certain times (rhythm or natural family planning) [GO TO NEXT MODULE]
- 15 Withdrawal (or pulling out) [GO TO NEXT MODULE]
- 16 Foam, jelly, film, or cream [GO TO NEXT MODULE]
- 17 Emergency contraception (morning after pill) [GO TO NEXT MODULE]
- 18 Other method [GO TO NEXT MODULE]

Do not read:

- 77 Don't know/Not sure
- 99 Refused

Some reasons for not doing anything to keep you from getting pregnant the last time you had sex might include wanting a pregnancy, not being able to pay for birth control, or not thinking that you can get pregnant.

SAPHFPQ3 What was your main reason for not doing anything the last time you had sex to keep you from getting pregnant?

INTERVIEWER NOTE: IF RESPONDENT REPORTS "OTHER REASON," ASK RESPONDENT TO "PLEASE SPECIFY" AND ENSURE THAT THEIR RESPONSE DOES NOT FIT INTO ANOTHER CATEGORY. IF RESPONSE DOES FIT INTO ANOTHER CATEGORY, PLEASE MARK APPROPRIATELY.

Read only if necessary:

- 01 You didn't think you were going to have sex/no regular partner
- 02 You just didn't think about it
- 03 Don't care if you get pregnant
- 04 You want a pregnancy
- 05 You or your partner don't want to use birth control
- 06 You or your partner don't like birth control/side effects
- 07 You couldn't pay for birth control
- 08 You had a problem getting birth control when you needed it
- 09 Religious reasons
- 10 Lapse in use of a method
- 11 Don't think you or your partner can get pregnant (infertile or too old)
- 12 You had tubes tied (sterilization)
- 13 You had a hysterectomy
- 14 Your partner had a vasectomy (sterilization)
- 15 You are currently breast-feeding
- 16 You just had a baby/postpartum
- 17 You are pregnant now
- 18 Same sex partner
- 19 Other reasons
- 77 Don't know/Not sure
- 99 Refused

State Added: Sugar Sweetened Beverages (Form A)

SASSBQ1 During the past 30 days, how often did you drink regular soda or pop that contains sugar? Do not include diet soda or diet pop.

INTERVIEWER NOTE: Please remind interviewees to include regular soda that they mixed with alcohol.

Please read: You can answer times per day, week, or month: for example, twice a day, once a week, and so forth.

- 1 __ Times per day
- 2 __ Times per week
- 3 __ Times per month

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

Do not read:

- 888 None
- 777 Don't know / Not sure
- 999 Refused

SASSBQ2. During the past 30 days, how often did you drink sweetened fruit drinks, such as Kool-aid, cranberry juice cocktail, and lemonade? Include fruit drinks you made at home and added sugar to.

INTERVIEWER NOTE: Fruit drinks are sweetened beverages that often contain some fruit juice or flavoring. Do not include 100% fruit juice, sweet tea, coffee drinks, sports drinks, or energy drinks.

Please read: You can answer times per day, week, or month: for example, twice a day, once a week, and so forth.

- 1 __ Times per day
- 2 __ Times per week
- 3 __ Times per month

Do not read:

- 888 None
- 777 Don't know / Not sure
- 999 Refused

State Added: NUTRITION (Form A)

SANQ1 During the past 30 days, about how often did you have milk, either to drink or on cereal? Include cow's milk and soy milk, but NOT rice, goat, coconut, and almond milk.

INTERVIEWER NOTE: LACTOSE-FREE MILK COUNTS, BUT NOT SMALL AMOUNTS OF MILK OF ANY KIND IN COFFEE OR TEA.]

INTERVIEWER NOTE: ENTER QUANTITY IN TIMES PER DAY, WEEK, OR MONTH

INTERVIEWER NOTE: IF RESPONDENT GIVES A NUMBER WITHOUT A TIME FRAME, ASK "WAS THAT PER DAY, WEEK, OR MONTH?"

- 1 __ Days
- 2 __ Weeks
- 3 __ Months
- 300 Less than once a month [GO TO NEXT MODULE]
- 555 Never [GO TO NEXT MODULE]
- 777 Don't Know[GO TO NEXT MODULE]
- 999 Refused [GO TO NEXT MODULE]

SANQ2 If you drink cow's milk, was the milk you typically drank or used; whole milk, reduced-fat 2%, low-fat 1%, or fat-free, skim milk?

INTERVIEWER NOTE: IF MORE THAN ONE KIND MENTIONED, ASK "WHICH KIND DID YOU DRINK OR USE MOST OFTEN?"

INTERVIEWER NOTE: IF RESPONDENT SAYS "VITAMIN D MILK", PROBE BY REPEATING RESPONSE OPTIONS.]

- 1 Whole milk
- 2 Reduced Fat (2%)
- 3 Low fat (1%)
- 4 Fat free (skim)
- 5 I drink soy milk
- 7 Don't know/not sure
- 9 Refused

State Added: Neighborhood PHYSICAL ACTIVITY (Form A)

SANPQ1 Overall, how would you rate your neighborhood as a place to walk?

Would you say...

- 1 Very pleasant
- 2 Somewhat pleasant
- 3 Not very pleasant
- 4 Not at all pleasant
- 7 Don't Know/Not Sure
- 9 Refused

SANPQ2 Does your neighborhood have any sidewalks?

- 1 Yes
- 2 No

7 Don't Know/Not Sure

9 Refused

SANPQ3 Do you use schools that are open in your community for public recreation activities?

- 1 Yes
- 2 No
- 3 Schools in my community are not open for the public to use
- 7 Don't Know/Not Sure
- 9 Refused

SANPQ4 Do you use walking trails, parks, playgrounds, sports fields in your community for physical activity?

- 1 Yes
- 2 No
- 3 My community does not have these facilities
- 7 Don't Know/Not Sure
- 9 Refused

State Added: Social Determinants of Health

SASDHQ1 During the last 12 months, was there a time when you were not able to pay your mortgage, rent or utility bills?

- 1 Yes
- 2 No
- 7 Don't know/not sure
- 9 Refused

SASDHQ2 In the last 12 months, how many times have you moved from one home to another?

__ __ Number of moves in past 12 months [01-52]

88 None (Did not move in past 12 months)

77 Don't know/Not sure

99 Refused

SASDHQ3 How safe from crime do you consider your neighborhood to be? Would you say...

Please read:

- 1 Extremely safe
- 2 Safe
- 3 Unsafe
- 4 Extremely unsafe

Do not read:

7 Don't know/Not sure

9 Refused

SASDHQ4 For the next two statements, please tell me whether the statement was often true, sometimes true, or never true for you in the last 12 months (that is, since last [CATI NOTE: NAME OF CURRENT MONTH]). The first statement is, "The food that I bought just didn't last, and I didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?

- 1 Often true,
- 2 Sometimes true, or
- 3 Never true

Do not read:

7 Don't Know/Not sure

9 Refused

SASDHQ5 I couldn't afford to eat balanced meals. Was that often, sometimes, or never true for you in the last 12 months?

- 1 Often true,
- 2 Sometimes true, or
- 3 Never true

Do not read:

7 Don't Know /Not sure

9 Refused

SASDHQ6 In general, how do your finances usually work out at the end of the month? Do you find that you usually:

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

Please read:

- 1 End up with some money left over,
- 2 Have just enough money to make ends meet, or
- 3 Do not have enough money to make ends meet

Do not read:

- 7 Don't Know/Not sure
- 9 Refused

SASDHQ7 Stress means a situation in which a person feels tense, restless, nervous, or anxious, or is unable to sleep at night because his/her mind is troubled all the time. Within the last 30 days, how often have you felt this kind of stress?

Please read:

- 1 None of the time,
- 2 A little of the time,
- 3 Some of the time,
- 4 Most of the time, or
- 5 All of the time

Do not read:

- 7 Don't know/Not sure
- 9 Refused

State Added: Opioid Use

SAOUQ1 In the past year, did you take any prescription opioid pain relievers such as hydrocodone, codeine, oxycodone, morphine, Lortab, Vicodin, Tylenol #3, Percocet, or OxyContin?

Interviewer reminder: We only want to know about prescription medication NOT medication that is available over the counter.

- 1 Yes
- 2 No [Skip to next module]
- 7 Don't know/Not sure [Skip to next module]
- 9 Refused [Skip to next module]

SAOUQ2 In the past year, did you take any of the opioid pain medications more frequently or in higher doses than directed by a doctor?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

SAOUQ3 In the past year, have you taken any prescription opioid pain relievers (hydrocodone, codeine, oxycodone, morphine, Lortab, Vicodin, Tylenol #3, Percocet, OxyContin) when it was NOT prescribed to you by a doctor, dentist, nurse practitioner, or other healthcare provider?

Interviewer reminder: We only want to know about prescription medication NOT medication that is available over the counter.

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

Thank you for answering these questions. If you would like assistance or more information about opioid-related issues, please contact Your Life Iowa by calling 855-581-8111, texting 855-895-TEXT(8398) or visiting www.yourlifeiowa.org. Your Life Iowa offers free and confidential support for those in need or concerned about others.

State Added: Physical and Emotional Neglect (Form B)

I'd like to ask you some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic and some people may feel uncomfortable with these questions. At the end of this section, I will give you a phone number for an organization that can provide information and referral for these issues. Please keep in mind that you can ask me to skip a question you do not want to answer.

All questions refer to the time period before you were 18 years of age. Now,

looking back before you were 18 years of age, how true were each of the following statements:

SAPENQ1 You knew there was someone to take care of you and protect you. Was this never true, rarely true, often true, or very often true?

- 1 Never true,
- 2 Rarely true,
- 3 Often true, or
- 4 Very often true?
- 7 Don't know/not sure
- 9 Refused

SAPENQ2 Your parents were too drunk or high to take care of the family. Was this never true, rarely true, often true, or very often true?

- 1 Never true,
- 2 Rarely true,
- 3 Often true, or
- 4 Very often true?
- 7 Don't know/not sure
- 9 Refused

SAPENQ3 There was someone in your family who helped you feel important or special. Was this never true, rarely true, often true, or very often true?

- 1 Never true,
- 2 Rarely true,
- 3 Often true, or
- 4 Very often true?
- 7 Don't know/not sure
- 9 Refused

SAPENQ4 You felt loved? Was this never true, rarely true, often true, or very often true?

- 1 Never true,
- 2 Rarely true,
- 3 Often true, or
- 4 Very often true?
- 7 Don't know/not sure
- 9 Refused

SAPENQ5 There was someone to take you to the doctor if you needed it. Was this never true, rarely true, often true, or very often true?

- 1 Never true,
- 2 Rarely true,
- 3 Often true, or
- 4 Very often true?
- 7 Don't know/not sure
- 9 Refused

SAPENQ6 Your family was a source of strength and support. Was this never true, rarely true, often true, or very often true?

- 1 Never true,
- 2 Rarely true,
- 3 Often true, or
- 4 Very often true?
- 7 Don't know/not sure
- 9 Refused

State Added: Resiliency (Form B)

The next questions also refer to the time before you were eighteen years of age.

SARQ1 Thinking about when you were in high school, how often did you feel like you belonged? Would you say...

- 1 Never,
- 2 Rarely,
- 3 Sometimes,
- 4 Often, or
- 5 Very often?
- 8 Did not attend High School
- 7 Don't know/Not Sure
- 9 Refused

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

NOTE: (If respondent attended multiple high schools, ask respondent to respond about the high schools in general.)

SARQ2 How often did you feel supported by your friends? Would you say...

- 1 Never,
- 2 Rarely,
- 3 Sometimes,
- 4 Often, or
- 5 Very often?
- 7 Don't know/Not Sure
- 9 Refused

NOTE: (If respondent says some friends did/didn't, ask respondent to answer about friends in general.)

SARQ3 How often were there at least two adults, other than your parents, who took a genuine interest in you? Would you say...

- 1 Never,
- 2 Rarely,
- 3 Sometimes,
- 4 Often, or
- 5 Very often?
- 7 Don't know/Not Sure
- 9 Refused

SARQ4 How often did you feel that you were able to talk to your family about your feelings? Would you say...

- 1 Never,
- 2 Rarely,
- 3 Sometimes,
- 4 Often, or
- 5 Very often?
- 7 Don't know/Not Sure
- 9 Refused

SARQ5 How often did you enjoy participating in your community's traditions? Would you say...

- 1 Never,
- 2 Rarely,
- 3 Sometimes,
- 4 Often, or
- 5 Very often?
- 7 Don't know/Not Sure
- 9 Refused

NOTE: If respondent asks what we mean by "community" or "traditions", say "whatever it means to you."

SARQ6 How often did you feel your family stood by you during difficult times? Would you say...

- 1 Never,
- 2 Rarely,
- 3 Sometimes,
- 4 Often, or
- 5 Very often?
- 7 Don't know/Not Sure
- 9 Refused

NOTE: If respondent says some family members did/didn't, ask respondent to answer about family in general. If respondent's family situation was complicated, say "whoever you considered your family when you were growing up".

State Added: Adverse Childhood Experiences

[ONLY SAY IF FORM A]

I'd like to ask you some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic and some people may feel uncomfortable with these questions. At the end of this section, I will give you a phone number for an organization that can provide information and referral for these issues. Please keep in mind that you can ask me to skip any question you do not want to answer.

All questions refer to the time period before you were 18 years of age. Now, looking back before you were 18 years of age—

[ONLY SAY IF FORM B]

Again, we are still talking about before you were 18 years of age.

SAACEQ1 Did you live with anyone who was depressed, mentally ill, or suicidal?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

SAACEQ2 Did you live with anyone who was a problem drinker or alcoholic?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

SAACEQ3 Did you live with anyone who used illegal street drugs or who abused prescription medications?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

SAACEQ4 Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

SAACEQ5 Were your parents separated or divorced?

- 1 Yes
- 2 No
- 8 Parents not married
- 7 Don't know / Not sure
- 9 Refused

SAACEQ6 How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up? Would you say...

- 1 Never,
- 2 Once, or
- 3 More than once?
- 7 Don't know / Not sure
- 9 Refused

SAACEQ7 Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking.

Would you say...

- 1 Never,
- 2 Once, or
- 3 More than once?
- 7 Don't know / Not sure
- 9 Refused

SAACEQ8 How often did a parent or adult in your home ever swear at you, insult you, or put you down? Would you say...

- 1 Never,
- 2 Once, or
- 3 More than once?
- 7 Don't know / Not sure
- 9 Refused

SAACEQ9 How often did anyone at least 5 years older than you or an adult touch you sexually? Would you say...

- 1 Never,
- 2 Once, or
- 3 More than once?
- 7 Don't know / Not sure
- 9 Refused

Appendix – Iowa 2018 BRFSS Questionnaire *continued*

SAACEQ10 How often did anyone at least 5 years older than you or an adult try to make you touch them sexually? Would you say...

- 1 Never,
- 2 Once, or
- 3 More than once?
- 7 Don't know / Not sure
- 9 Refused

SAACEQ11 How often did anyone at least 5 years older than you or an adult, force you to have sex? Would you say...

- 1 Never,
- 2 Once, or
- 3 More than once?
- 7 Don't know / Not sure
- 9 Refused

As I mentioned when we started this section, I would give you a phone number for an organization that can provide information and referral for these issues. Would you like that number? You can dial 1-800-422-4453 to reach the National Hotline for child abuse.

State Added: Gambling

SAGQ1 Have you gambled or bet for money or possessions in the past 12 months?

- 1 Yes
- 2 No [Skip to Asthma Callback]
- 7 Don't know/Not sure [Skip to Asthma Callback]
- 9 Refused [Skip to Asthma Callback]

SAGQ2 During the past 12 months, have you become restless, irritable or anxious when trying to stop or cut down on gambling?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

SAGQ3 During the past 12 months, have you tried to keep your family or friends from knowing how much you gamble?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

SAGQ4 During the past 12 months, did you have such financial trouble as a result of your gambling that you had to get help with living expenses from family, friends, or welfare?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

Asthma Call-Back Permission Script

We would like to call you again within the next 2 weeks to talk in more detail about your experiences with asthma. The information will be used to help develop and improve the asthma programs in <STATE>. The information you gave us today and any you give us in the future will be kept confidential. If you agree to this, we will keep your first name or initials and phone number on file, separate from the answers collected today. Even if you agree now, you or others may refuse to participate in the future. Would it be okay if we called you back to ask additional asthma-related questions at a later time?

- 1 Yes
- 2 No

Can I please have your first name or initials, so we will know who to ask for when we call back?

_____ Enter first name or initials.

What is a good time to call you back? For example evenings, days, or weekends?

Closing statement

Cell Phone

That was my last question. Everyone's answers will be combined to help us provide information about the health practices of people in this state. Thank you very much for your time and cooperation.

Landline

That was my last question. Everyone's answers will be combined to help us provide information about the health practices of people in Iowa. Also, I want to let you know that my supervisor will be checking my work and may be calling you back in a few weeks just to see how the interview went. Thank you very much for your time and cooperation.



Iowa Department of Public Health
Protecting and Improving the Health of Iowans

